

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
PERMIT TO CONSTRUCT

PERMIT NO. 09-551

Yellowstone National Park Fishing Bridge Well #2 Completion
PWS #5680079

This permit hereby authorizes the applicant:

Nancy Ward, Supervising Engineer
Yellowstone National Park
P.O. Box 168
Mammoth, WY 82190

to equip Well #2 with a pump, motor, and pitless unit; according to the procedures and conditions of the application number 09-551. The well had an artesian flow of less than 10 gallons per minute (gpm) and will be equipped to increase the yield to about 90 gpm. The facility is located near the intersection of the Grand Loop Road and the East Entrance Road at Latitude 44.6 North Longitude 110.4 West in the county of Teton, in the State of Wyoming. All construction, installation, or modification allowed by this permit shall be completed by October 1, 2010.

The issuance of this permit confirms that the Wyoming Department of Environmental Quality (DEQ) has evaluated the application submitted by the permittee and determined that it meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the engineer's design are the responsibility of the permittee, owner, and operator.

Granting this permit does not imply that DEQ guarantees or ensures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements. Compliance with discharge standards remains the responsibility of the permittee.

Nothing in this permit constitutes an endorsement by DEQ of the construction or the design of the facility described herein. This permit verifies only that the submitted application meets the design and construction standards imposed by Wyoming statutes, rules and regulations. The DEQ assumes no liability for, and does not in any way guarantee or warrant the performance or operation of the permitted facility. The permittee, owner and operator are solely responsible for any liability arising from the construction or operation of the permitted facility. By issuing this permit, the State of Wyoming does not waive its sovereign immunity.

The permittee shall allow authorized representatives from DEQ to enter and inspect any property, premise or place on or at which the facility is located or is being constructed or installed for the purpose of investigating actual or potential sources of water pollution, and for determining compliance or non-compliance with any rules, regulations, standards, permits or orders.

Nothing in this permit shall be construed to preclude the institution of any legal action or other proceeding to enforce any applicable provision of law or rules and regulations. It is the duty of the permittee, owner and operator to comply with all applicable federal, state and local laws or regulations in the exercise of its activities authorized by this permit.

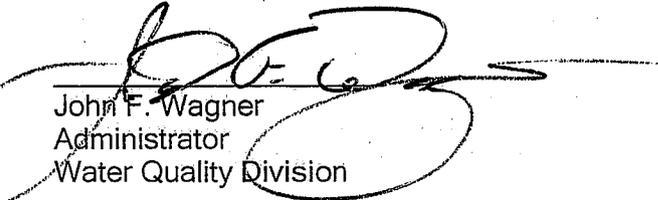
The issuance of this permit does not convey any property rights in either real or personal property or any invasion of personal rights, or any infringement of federal, state or local laws or regulations.

The permittee shall construct and operate the permitted facility in accordance with the statements, representations, procedures, terms and conditions of the permit application, supporting documents and permit. This permit does not relieve the permittee from any duty to obtain any other permit or authorization that may be required by any provision of federal, state or local laws.

In carrying out its activities authorized by this permit, the permittee, owner and operator shall comply with all of the following permit conditions:

- 1 of 3 The applicant will provide immediate oral or written notice to the Wyoming Department of Environmental Quality, Water Quality Division (WQD), Northwest District Engineer, 510 Meadowview Drive, Lander, WY 82520, 307-332-3144, FAX 307-332-3183, in accordance with the provisions of Section 11, Chapter 3, Wyoming Water Quality Rules and Regulations of any changes or modifications which are not consistent with the terms and conditions of this permit.
- 2 of 3 Within sixty days of completion of construction of the authorized facility, the applicant will submit to the Northwest District a certification of completion signed by the Engineer of Record or the owner. A form titled "Certificate of Completion" has been provided.
 - a. Date that construction of the facility was completed; and
 - b. Date that the facility was placed in operation; and
 - c. Certification the facility was constructed in accordance with the terms and conditions of the permit;
or
 - d. Certification the facility was completed with changes or modifications. Submittal of as-constructed plans and specifications for the system as it was constructed, certified by an engineer if appropriate is required. All modifications or deviations from the authorized plans must be highlighted.
- 3 of 3 The review and approval of this permit is based upon the items identified in the attached "Statement of Basis".

AUTHORIZED BY:


John F. Wagner
Administrator
Water Quality Division


John V. Corra
Director
Department of Environmental Quality

11-2-09
Date of Issuance

JSB/rm/9-0978

STATEMENT OF BASIS

1. Permit Number: 09-551
2. Application reviewed for compliance with the following regulations:
Chapters 3 and 12 of the Wyoming Water Quality Rules and Regulations.
3. Does the permit comply with all applicable regulations identified above?
No, Chapter 12, Section 9(b)(ii)(A) requires that the yield and drawdown test be performed at least 1.5 times the design rate anticipated. The design is to equip the well at the same rate at which it was tested. The consultant demonstrated the well equipped at the tested flow rate should maintain a drawdown level which is at least 25 feet above the pump intake level. DEQ understands that the well is to be used to supplement the water supply, not to be the primary source. DEQ hereby grants a variance to the above referenced regulation.
4. Facilities include components not specifically covered by regulations and approval is based upon a deviation from applicable regulations in accordance with Section 5 of applicable regulations.
No.
5. If Section 17 of Chapter 3 review is required indicate the basis for determining groundwater will be protected.
Public water supply wells are exempted from review by Chapter 3, Section 17
6. Documentation of Statement of Basis: The archives file for this permit includes adequate documentation of all sections of this Statement of Basis.

CERTIFICATION

The issuance of this permit is based upon a review of the application package submitted in accordance with the requirements of Chapter 3, Section 6, Wyoming Water Quality Rules and Regulations. This review was performed by James S. Brough, jbroug@state.wy.us, Northwest District Engineer and completed on October 16, 2009. Permit issuance is recommended based upon statements, representations, and procedures presented in the permit application and supporting documents permit conditions, and the items identified in this "Statement of Basis."

cc: Phillip Gyr, P.E., Nelson Engineering, P.O. Box 1599, Jackson, WY 83001



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

NOTIFICATION OF COVERAGE

October 7, 2009

Floyd Mount
PO Box 433
Decorah, IA 52101

RE: Mount Ranch Small Residential Wastewater System, Crook County
Location: SE ¼, Section 28, Township 55N, Range 64W; Permit # 09-552

Dear Mr. Mount:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install, or modify the facility in accordance with general permit and the materials submitted in your application package. The General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage,
http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

Additionally, the following permit condition applies:

1. Cleanouts are required every 100 feet and at all changes in direction 22.5 degrees and greater, both horizontal and vertical. This requirement includes both the pipeline from the house to the septic tank and from the septic tank to the leachfield.
2. Either a 6-inch diameter clean-out riser or a manway from each compartment of the septic tank must be extended to the ground surface from all septic tanks.

Please be advised that Crook County inspects all small wastewater systems permitted through WDEQ. Please contact Crook County Growth and Development at 307.283.4548 to arrange an inspection of the system. **Septic systems shall not be installed during adverse weather. This includes rain, snow, severely cold temperatures, or excessively moist soils.** Please contact me with questions at (307) 777-6941.

Sincerely,

Suzanne Engels
Suzanne Engels
WDEQ/WQD

SE/rm/9-0886

cc: IPS, Cheyenne
WYDEQ Casper File
Tim Lyons, Crook County Growth and Development
Randy Gantz, Gantz Backhoe Service, P.O. Box 280, Hulett, WY 82720

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





The State
of Wyoming



Department of Environmental Quality

Dave Freudenthal, Governor

John Corra, Director

152 N. Durbin Street • Suite 100 • Casper, Wyoming 82601

October 29, 2008

William A. Mentock, P.E.
Sanderson Stewart
1095 Sugar View Drive
Sheridan, WY 82801

RE: Return of Application for the Twin Eagle at Powder Horn Ranch Subdivision,
Number Two, Phase I Sanitary Sewer System, Sheridan County 09-553

Dear Mr. Mentock:

Our office received an application for a Permit to Construct for the Twin Eagle at Powder Horn Ranch Subdivision, Number Two, Phase I Sanitary Sewer System. We performed a completeness review of the application and have determined that the application is incomplete. Following is a brief list of items that was found to be lacking in the submittal. *This list should not be construed as a complete list of missing items:*

- 1) The engineering design report does not address and evaluate any existing conditions or impacts to the downstream collection lines and the wastewater treatment facility. This is specifically required in Chapter 11, Section 6 – Engineering Design Report. Please review this entire section for applicable requirements and resubmit. We cannot evaluate the impact of the additional development without knowing how the existing collection and treatment facility are currently operating, what the capacity is, how that was arrived at, and what the potential for future growth is.
- 2) There was no discussion on the phasing on the development – this permit application states that it is for Phase I, but it is not clear from the design report how many lots are being developed at this time, and when Phase II will be constructed. Please clarify. Further, the site plan shows a possible pool, hot tub, and shower area. This should be included in any estimates for further development.

Therefore, in accordance with Wyoming Department of Environmental Quality/Water Quality Rules and Regulations Chapter 3, Section 14 – Denial of a Permit or Coverage under a General Permit, we are returning the application materials to you, as we are unable to process your application without the required information. We will keep one copy for our records.



If you have any questions, please contact me at (307) 473-3478 or kfarle@wyo.gov

Sincerely,

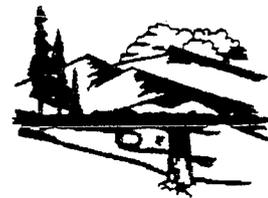
Karen L. Farley

Karen L. Farley, P.E.
Northeast District Supervisor
WDEQ/WQD

cc: IPS
WDEQ File



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

NOTIFICATION OF COVERAGE

October 7, 2009

Jamie Reynolds
12 Frosty Lane
Moorcroft, WY 82721

RE: Reynolds Small Residential Wastewater System, Crook County
Location: NE ¼, Section 19, Township 50N, Range 66W; Permit # 09-554

Dear Ms. Reynolds:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install, or modify the facility in accordance with general permit and the materials submitted in your application package. The General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage, http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

Additionally, the following permit condition applies:

1. Cleanouts are required every 100 feet and at all changes in direction 22.5 degrees and greater, both horizontal and vertical. This requirement includes both the pipeline from the house to the septic tank and from the septic tank to the leachfield.
2. Either a 6-inch diameter clean-out riser or a manway from each compartment of the septic tank must be extended to the ground surface from all septic tanks.

Please be advised that Crook County inspects all small wastewater systems permitted through WDEQ. Please contact Crook County Growth and Development at 307.283.4548 to arrange an inspection of the system. **Septic systems shall not be installed during adverse weather. This includes rain, snow, severely cold temperatures, or excessively moist soils.** Please contact me with questions at (307) 777.6941.

Sincerely,

Suzanne Engels
WDEQ/WQD

SE/rm/9-0887

cc: IPS, Cheyenne
WYDEQ Casper File
Tim Lyons, Crook County Growth and Development

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH
(307) 777-7937
FAX 777-3610

ABANDONED MINES
(307) 777-6145
FAX 777-6462

AIR QUALITY
(307) 777-7391
FAX 777-5616

INDUSTRIAL SITING
(307) 777-7369
FAX 777-5973

LAND QUALITY
(307) 777-7756
FAX 777-5864

SOLID & HAZ. WASTE
(307) 777-7752
FAX 777-5973

WATER QUALITY
(307) 777-7781
FAX 777-5973





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

NOTIFICATION OF COVERAGE

October 8, 2009

Joseph Julian
119 Sand Creek Rd
Beulah, WY 82712

RE: Julian Small Residential Wastewater System, Crook County
Location: SW ¼, S5, T52N, R60W; Permit # 09-555

Dear Mr. Julian:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install, or modify the facility in accordance with general permit and the materials submitted in your application package. The General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage,

http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

Additionally, the following permit conditions apply:

1. Cleanouts are required every 100 feet and at all changes in direction 22.5 degrees and greater, both horizontal and vertical. This requirement includes both the pipeline from the house to the septic tank and from the septic tank to the leachfield.
2. Either a 6-inch diameter clean-out riser or a manway from each compartment of the septic tank must be extended to the ground surface from all septic tanks.

Please be advised that Crook County inspects all small wastewater systems permitted through WDEQ. Please contact Crook County Growth and Development at 307.283.4548 to arrange an inspection of the system. **Septic systems shall not be installed during adverse weather. This includes rain, snow, severely cold temperatures, or excessively moist soils.** If you have any questions, please contact me at (307) 777-6941.

Sincerely,

Suzanne Engels
WDEQ/WQD

SE/rm/9-0895

cc: IPS, Cheyenne
WYDEQ Casper File
Tim Lyons, Crook County Growth and Development, P.O. Box 848, Sundance, WY 82729

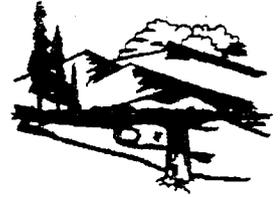
Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

NOTIFICATION OF COVERAGE

October 8, 2009

Tony Lantis
P.O. Box 96
Sundance, WY 82729

RE: Lantis Small Residential Wastewater System, Crook County
Location: S2, T50N, R62W; Permit # 09-556

Dear Mr. Lantis:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install, or modify the facility in accordance with general permit and the materials submitted in your application package. The General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage,

http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

Additionally, the following permit conditions apply:

1. Cleanouts are required every 100 feet and at all changes in direction 22.5 degrees and greater, both horizontal and vertical. This requirement includes both the pipeline from the house to the septic tank and from the septic tank to the leachfield.
2. Either a 6-inch diameter clean-out riser or a manway from each compartment of the septic tank must be extended to the ground surface from all septic tanks.

Please be advised that Crook County inspects all small wastewater systems permitted through WDEQ. Please contact Crook County Growth and Development at 307.283.4548 to arrange an inspection of the system. **Septic systems shall not be installed during adverse weather. This includes rain, snow, severely cold temperatures, or excessively moist soils.** If you have any questions, please contact me at (307) 777-6941.

Sincerely,

Suzanne Engels
Suzanne Engels
WDEQ/WQD

SE/rm/9-0890

cc: IPS, Cheyenne
WYDEQ Casper File
Tim Lyons, Crook County Growth and Development, P.O. Box 848, Sundance, WY 82729
Gerald McInerney, P.O. Box 124, Sundance, WY 82729

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





The State
of Wyoming



Department of Environmental Quality

Dave Freudenthal, Governor

John Corra, Director

152 N. Durbin Street • Suite 100 • Casper, Wyoming 82601

November 24, 2009

AR application returned

Robert A. Rothermel, P.E.
FourFront Design, Inc.
517 7th Street
Rapid City, SD 57701

09-557

RE: Return of Application for the Sheridan VA Medical Center, Sanitary Sewer Upgrades,

Dear Mr. Rothermel:

Our office received an application for a Permit to Construct for the Sheridan VA Medical Center, Sanitary Sewer Upgrades, Sheridan, Wyoming on October-5, 2009. Upon performing our review, it was determined that the application is incomplete. The submittal did not include an engineering design report, which is required for all applications. Please refer to **Chapter 11, Section 6**, for further information on what must be provided with all construction applications.

Therefore, in accordance with Wyoming Department of Environmental Quality/Water Quality Rules and Regulations Chapter 3, Section 14 – Denial of a Permit or Coverage under a General Permit, we are returning the application materials to you, as we are unable to process your application without the required information.

If you have any questions, please contact me at (307) 473-3478 or kfarle@wyo.gov

Sincerely,

Karen L. Farley, P.E.
Northeast District Supervisor
WDEQ/WQD

cc: Jason Brown, 1989 Fort Road, Sheridan, WY 82801
IPS
WDEQ File





The State
of Wyoming



Department of Environmental Quality

Dave Freudenthal, Governor

John Corra, Director

152 N. Durbin Street • Suite 100 • Casper, Wyoming 82601

November 24, 2009

Robert A. Rothermel, P.E.
FourFront Design, Inc.
517 7th Street
Rapid City, SD 57701

09-558
AR
Application returned

RE: Return of Application for the Sheridan VA Medical Center, Parking Lot Rehabilitation

Dear Mr. Rothermel:

Our office received an application for a Permit to Construct for the Sheridan VA Medical Center, Parking Lot Rehabilitation, Sheridan, Wyoming on October 5, 2009. Upon performing our review, it was determined that the application is incomplete. The submittal did not include an engineering design report, which is required for all applications. Please refer to **Chapter 12, Section 6**, for further information on what must be provided with all construction applications.

Therefore, in accordance with Wyoming Department of Environmental Quality/Water Quality Rules and Regulations Chapter 3, Section 14 – Denial of a Permit or Coverage under a General Permit, we are returning the application materials to you, as we are unable to process your application without the required information.

If you have any questions, please contact me at (307) 473-3478 or kfarley@wvo.gov

Sincerely,

Karen L. Farley, P.E.
Northeast District Supervisor
WDEQ/WQD

cc: Jason Brown, 1989 Fort Road, Sheridan, WY 82801
IPS
WDEQ File





The State
of Wyoming



Department of Environmental Quality

Dave Freudenthal, Governor

John Corra, Director

152 N. Durbin Street • Suite 100 • Casper, Wyoming 82601

NOTIFICATION OF COVERAGE

October 30, 2009

Donald Sharkey, Mayor
Town of Upton
725 2nd Street
Upton, WY 82730

RE: Town of Upton, Water and Sewer Replacements 2009 Project, WDEQ #09-559
Upton, WY

Mayor Sharkey:

The above application for coverage under General Permit to Construct, Install, Modify or Operate Extensions to or Modification of Existing Public Water Supply Distribution Systems in accordance with Chapter 3 and Chapter 12 of the Wyoming Water Quality Rules and Regulations and for coverage under General Permit to Construct, Install, Modify or Operate Extensions to or Modification of Existing Sewage Collection Systems in accordance with Chapter 3 and Chapter 11 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install or modify the facility(ies) in accordance with the general permits and the materials submitted in your application package. The General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage,

http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

If you have any questions, please contact me at 307-473-3478.

Sincerely,

Karen L. Farley

Karen L. Farley, P.E.
WDEQ/WQD, Northeast District Supervisor

Enclosures: Certificate of Completion

cc: Kenneth C. Rathbun, P.E., Bearlodge Ltd., Inc., 520 Cleveland Street, Sundance, WY 82729
WDEQ File, IPS



WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
PERMIT TO CONSTRUCT

PERMIT NO. 09-560

Hudson Water Treatment Plant
PWS #WY5600183

This permit hereby authorizes the applicant:

Jake Hamon, Mayor
Town of Hudson
P.O. Box 56
Hudson, WY 82501

to construct a new water treatment plant to comply with the Environmental Protection Agency's (EPA) administrative order to meet EPA's Surface Water Treatment Regulations and to satisfy EPA's secondary water quality standards, according to the procedures and conditions of the application number 09-560. This project consist of constructing a new water treatment building which will be equipped with the following: a raw water process tank, multiple sets of water booster pumps with variable frequency drives, two skid-mounted low pressure membrane units, one skid-mounted high pressure membrane unit, multiple chemical feed systems, a baffled clearwell, monitoring and sampling equipment. The water treatment will include the following treatment processes: riverbank filtration, manganese oxidation with potassium permanganate, low and high pressure membrane filtration and chlorination. The facility is located within Lots 19 through 24, Block 41, Original Town of Hudson, in the county of Fremont, in the State of Wyoming. All construction, installation, or modification allowed by this permit shall be completed by December 31, 2010.

The issuance of this permit confirms that the Wyoming Department of Environmental Quality (DEQ) has evaluated the application submitted by the permittee and determined that it meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the engineer's design are the responsibility of the permittee, owner, and operator.

Granting this permit does not imply that DEQ guarantees or ensures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements. Compliance with discharge standards remains the responsibility of the permittee.

Nothing in this permit constitutes an endorsement by DEQ of the construction or the design of the facility described herein. This permit verifies only that the submitted application meets the design and construction standards imposed by Wyoming statutes, rules and regulations. The DEQ assumes no liability for, and does not in any way guarantee or warrant the performance or operation of the permitted facility. The permittee, owner and operator are solely responsible for any liability arising from the construction or operation of the permitted facility. By issuing this permit, the State of Wyoming does not waive its sovereign immunity.

The permittee shall allow authorized representatives from DEQ to enter and inspect any property, premise or place on or at which the facility is located or is being constructed or installed for the purpose of investigating actual or potential sources of water pollution, and for determining compliance or non-compliance with any rules, regulations, standards, permits or orders.

Nothing in this permit shall be construed to preclude the institution of any legal action or other proceeding to enforce any applicable provision of law or rules and regulations. It is the duty of the permittee, owner and operator to comply with all applicable federal, state and local laws or regulations in the exercise of its activities authorized by this permit.

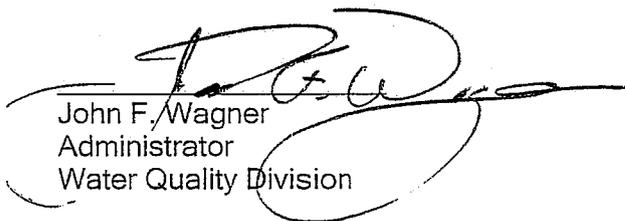
The issuance of this permit does not convey any property rights in either real or personal property or any invasion of personal rights, or any infringement of federal, state or local laws or regulations.

The permittee shall construct and operate the permitted facility in accordance with the statements, representations, procedures, terms and conditions of the permit application, supporting documents and permit. This permit does not relieve the permittee from any duty to obtain any other permit or authorization that may be required by any provision of federal, state or local laws.

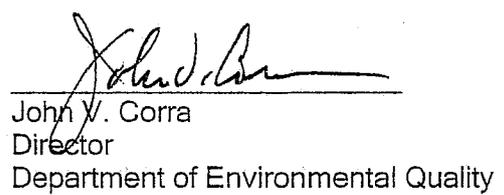
In carrying out its activities authorized by this permit, the permittee, owner and operator shall comply with all of the following permit conditions:

- 1 of 3 The applicant will provide immediate oral or written notice to the Wyoming Department of Environmental Quality, Water Quality Division (WQD), Northwest District Engineer, 510 Meadowview Dr., Lander, WY 82520, 307-332-3144, FAX 307-332-3183, in accordance with the provisions of Section 11, Chapter 3, Wyoming Water Quality Rules and Regulations of any changes or modifications which are not consistent with the terms and conditions of this permit.
- 2 of 3 Within sixty days of completion of construction of the authorized facility, the applicant will submit to the Northwest District a certification of completion signed by the Engineer of Record or the owner. A form titled "Certificate of Completion" has been provided.
 - a. Date that construction of the facility was completed; and
 - b. Date that the facility was placed in operation; and
 - c. Certification the facility was constructed in accordance with the terms and conditions of the permit; or
 - d. Certification the facility was completed with changes or modifications. Submittal of as-constructed plans and specifications for the system as it was constructed, certified by an engineer if appropriate is required. All modifications or deviations from the authorized plans must be highlighted.
- 3 of 3 The review and approval of this permit is based upon the items identified in the attached "Statement of Basis".

AUTHORIZED BY:



John F. Wagner
Administrator
Water Quality Division



John V. Corra
Director
Department of Environmental Quality

12/8/09
Date of Issuance

STATEMENT OF BASIS

1. Permit Number: 09-560
2. Application reviewed for compliance with the following regulations:
Chapters 3 and 12 of the Wyoming Water Quality Rules and Regulations.
3. Does the permit comply with all applicable regulations identified above? Yes
4. Facilities include components not specifically covered by regulations and approval is based upon a deviation from applicable regulations in accordance with Section 5 of applicable regulations.
Yes, membrane filtration is not specifically addressed in Chapter 12 regulations, a draft membrane policy was considered under this review.
5. Documentation of Statement of Basis: The archive file for this permit includes adequate documentation of all sections of this Statement of Basis.

CERTIFICATION

The issuance of this permit is based upon a review of the application package submitted in accordance with the requirements of Chapter 3, Section 6, Wyoming Water Quality Rules and Regulations. This review was performed by James Brough, jbroug@state.wy.us, Northwest District Engineer and completed on December 7, 2009. Permit issuance is recommended based upon statements, representations, and procedures presented in the permit application and supporting documents, permit conditions, and the items identified in this "Statement of Basis."

cc: Calvin Twiford, P.E., James Gores & Associates, 111 N. Third East, Riverton, WY 81501
Robert Takeda, P.E., 9222 Teddy Lane, Lone Tree, CO 80124

PERMIT TO CONSTRUCT

New
 Renewal
 Modified

PERMIT NO. 09-561
SPECIAL CONDITIONS
REF/PERMIT NO'S 98-366 & 98-154

South Recovery Trench

This permit hereby authorizes the applicant:

Jim Bridger Power Plant
P.O. Box 158
Point of Rocks, WY 82942

to construct a recovery trench to augment the current diesel spill collection and remediation system, including the excavation of contaminated soil, and installation of a physical barrier according to the procedures and conditions of the application number 09-561. The facility is located in the E $\frac{1}{2}$ SW $\frac{1}{4}$ §3, T. 20 N., R. 101 W. 6th P.M. in the county of Sweetwater, in the State of Wyoming. This permit shall be effective for a period of 2 years from the date of issuance of this permit.

The issuance of this permit confirms that the Department of Environmental Quality (DEQ) has evaluated the application submitted by the permittee and determined that it meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the engineer's design are the responsibility of the permittee, owner, and/or operator.

Granting this permit does not imply that the Wyoming DEQ guarantees or ensures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements. Compliance with discharge standards remains the responsibility of the permittee.

Nothing in this permit constitutes an endorsement by the DEQ of the construction or the design of the facility described herein. This permit verifies only that the submitted application meets the design and construction standards imposed by the DEQ statutes, rules and regulations. The DEQ assumes no liability for, and does not in any way guarantee or warrant the performance or operation of the permitted facility. The permittee, owner and/or operator are solely responsible for any liability arising from the construction or operation of the permitted facility. By issuing this permit, the state does not waive its sovereign immunity.

The permittee shall allow authorized representatives from the DEQ, Water Quality Division, to enter and inspect any property, premise or place on or at which the facility is located or is being constructed or installed for the purpose of investigating actual or potential sources of water pollution, and for determining compliance or non-compliance with any rules, regulations, standards, permits or orders.

The permittee shall notify representatives from the DEQ, Water Quality Division the day construction commences and give an estimate of completion of the project. The authorized representative in your area can be contacted at the following address: GPC West District, State of Wyoming, DEQ, Water Quality Division, 510 Meadowview Drive, Lander, Wyoming 82520; Telephone (307) 332-3144; Fax (307) 332-7726.

Nothing in this permit shall be construed to preclude the institution of any legal action or other proceeding to enforce any applicable provision of law or rules and regulations. It is the duty of the permittee, owner and/or operator to comply with all applicable federal, state and local laws or regulations in the exercise of its activities authorized by this permit.

The issuance of this permit does not convey any property rights in either real or personal property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

The permittee shall construct and operate the permitted facility in accordance with the statements, representations, procedures, terms and conditions of the permit application, supporting documents and permit. This permit does not relieve the permittee from any duty to obtain any other permit or authorization that may be required by any provision of federal, state or local laws.

In carrying out its activities authorized by this permit, the permittee, owner and/or operator shall comply with all of the following permit conditions:

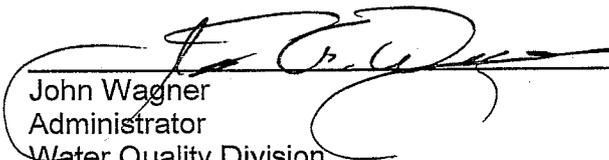
- 1) The final O&M manual for the operation of the product recovery system- i.e. belt skimmer with inline water separator shall be submitted 60 days following the completion of construction. As-built diagrams of the new systems shall be submitted with the O&M Manual. The new O&M manual does not need to duplicate information included in the previously submitted project proposal dated October, 2009; Appendix B.
- 2) Operation of the South Trench Recovery system is proposed for periods when temperatures are above freezing. When these conditions exist Jim Bridger Power Plant shall continuously operate the product recovery system. Other than for routine maintenance, permission from WDEQ/WQD prior to turning off the system will be required. In the event that the system is shutdown or out of service for more than two weeks, Jim Bridger Power Plant shall notify WDEQ/WQD, Cheyenne, by phone within (2) days and in writing within (1) week.
- 3) Monitoring & maintenance requirements for the new system include:
 - a) Trench system: once per week (5 day work week) for the first six weeks and monthly thereafter;
 - b) Belt skimmer maintenance: as stipulated by the manufacturer
 - c) On a monthly basis: record monthly skimmer production
 - d) On an annual basis: collect sample of skimmer tank production and analyze sample for total petroleum hydrocarbons by EPA Method 8015 (diesel range organics, TPH-DRO)
- 4) The trench system shall not be abandoned without prior approval from the Water Quality Division. After this installation has fulfilled its purpose, it shall be abandoned according to procedures specified in Chapter XI, Part G, Section 70 of Wyoming Water Quality Rules and Regulations. In addition, borings in public use areas, particularly paved streets and alleys, shall be abandoned in accordance with City and/or Highway Department requirements.
- 5) WDEQ/WQD personnel shall be given at least two (2) weeks notice prior to the installation of the trench so that they may be on site if deemed necessary.
- 6) The applicant is responsible for obtaining any Permits required by the State Engineer's Office (307-777-7354).
- 7) The results of any other analyses conducted on soil or water removed from the trench system shall be provided to the department as soon as they are available.
- 8) *Environmental Monitoring Program for Groundwater of the State:*
 - a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity and performed in accordance with WDEQ or EPA approved Standard Procedures or Quality Assurance/Quality Control (QA/QC) Plan.

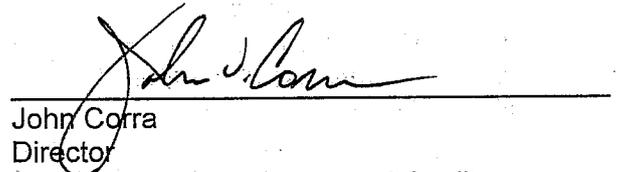
- b) The permittee shall maintain records of all monitoring information for a period of at least 3 years.
- c) Records of monitoring information shall include:
 - i) The date, exact place, and time of sampling or measurements;
 - ii) The name(s) of individual(s) who performed the sampling or measurements;
 - iii) The Mean Sea Level elevation of the water table to the closest .01 ft., and the depth to water (to the closest .01 ft.) from a marked measuring point at the top of casing.
 - iv) Sampling procedures and sample preservation accomplished;
 - v) The date(s) analyses were performed;
 - vi) Names of individuals who performed the analyses;
 - vii) The analytical techniques or methods used; and
 - viii) The results of such analyses.
- 9) Field Documentation of Design, Construction and Installation of the recovery trench:
 - a) The following information shall be documented during actual construction and installation of the recovery trench. The information shall be submitted to the Water Quality Division before or at the time of the first monitoring report.
 - i) Date/time of construction.
 - ii) Person developing information/other person(s) on site and their association to the project.
 - iii) Installation/excavation method.
 - iv) Location of access culverts (± 0.5 ft.).
 - v) Culvert depth (± 0.1 ft.).
 - vi) Culvert diameter.
 - vii) Trench depth and dimensions
 - viii) General lithologic log (including visual, olfactory and vapor detection observations).
 - ix) Culvert material.
 - x) Perforation materials and design/location.
 - xi) Perforation slot size/length.
 - xii) Gravel material/size
 - xiii) Gravel pack volume calculated/actually installed.
 - xiv) Surface seal design/construction.
 - xv) Type of protective well cap.
 - xvi) Surveyed elevation (± 0.01 ft. Mean Sea Level) of the ground surface.
 - xvii) surveyor's well reference point
 - xviii) top of culvert casing
 - xix) top of protective structure
 - xx) Location of identification marking.
 - xxi) Detailed 'as-built' construction drawing of culverts, including dimensions to all features.
 - xxii) *NOTE: The detailed drawing(s) to be submitted must indicate all features with relation to stratigraphic sections.*
- 10) Excavation cuttings must be screened and disposed of properly. Contaminated cuttings must be disposed of at a site approved by the WDEQ's Solid and Hazardous Waste Management Division (Lander Office (307)332-6924).
- 11) Water which is collected during trench excavation development or sampling must be disposed of properly.
- 12) Culvert caps shall be kept locked at all times other than for monitoring purposes. Any tampering with the culverts shall be reported immediately to the Division. The wells shall be clearly numbered using

either a stamp to permanently engrave the number into the steel top or by writing the number in the wet concrete of the base.

- 13) All sample collection, preservation, transportation and laboratory analytical procedures shall be completed in accordance with WDEQ or EPA approved Standard Procedures or Quality Assurance/Quality Control (QA/QC) Plan.
- 14) After 6 months of treatment system operation and annually thereafter, Jim Bridger Power Plant Company shall submit a report summarizing and documenting all performance monitoring, and describing plans and schedules for future operations. The report shall include an evaluation of the system's performance in meeting its original objectives. At a minimum, the report shall contain the following:
 - a) A description of the belt skimmer operation and an analysis of the empirical data from the operation which includes:
 - i) performance results (product thickness monitoring, monthly diesel production, TPH-DRO sampling results, etc.) ,and,
 - ii) documentation of any shut-downs or downtime (problems encountered and responses taken).
 - b) Empirical data shall be presented in tabular form (total volumes of diesel) and in graphical form (volumes of diesel recovered vs. month of operation), and;
 - c) Plan view maps & cross-sections of the site

AUTHORIZED BY:


John Wagner
Administrator
Water Quality Division


John Corra
Director
Department of Environmental Quality

11/23/09
Date of Issuance

JOC/rm/9-1034

STATEMENT OF BASIS

1. Permit Number: **09-561**

2. This application was reviewed for compliance with the applicable regulations :

 Chapters 3, 11 part G & GPC Guidelines 2 & 7

3. Does the permit comply with all applicable regulations identified above? Yes

4. A review to determine groundwater impacts in accordance with Section 17, Chapter 3 is required and currently in place with existing installation.

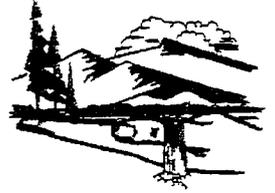
5. Documentation of Statement of Basis: The archive file for this permit includes adequate documentation of all sections of this Statement of Basis.

CERTIFICATION

The issuance of this permit is based upon a review of the application package submitted in accordance with the requirements of Chapter 3, Section 6, Wyoming Water Quality Rules and Regulations. This review was performed by James O'Connor, Project Geologist, Groundwater Section, Wyoming Department of Environmental Quality /Water Quality Division, and Kevin Frederick, Groundwater Section Manager, Groundwater Section, completed on November 23, 2009. Permit issuance is recommended based upon statements, representations, and procedures presented in the permit application and supporting documents, permit conditions, and the items identified in this "Statement of Basis.



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

NOTIFICATION OF COVERAGE

October 12, 2009

Frank Houk, Mayor
Town of Greybull
24 S. 5th Street
Greybull, WY 82426

RE: Greybull Firehall Connection. DEQ Permit #09-562, Big Horn County, NE1/4, Section 8, T52N, R 93W

Dear Mayor Houk,

This project consists of connecting approximately 25 linear feet of 4-inch ductile iron water line to the Town of Greybull's municipal water system to supply water to a new fire suppression system.

The above application for coverage under General Permit has been reviewed in accordance with Chapter 3, Section 7, and Chapter 12, Section 14 of the Wyoming Water Quality Rules and Regulations and is hereby approved.

You are authorized to construct, the facility in accordance with the general permit and the materials submitted in your application package. Your attention is directed to the mandatory reporting requirements outlined in Part V, Section O of the general permit.

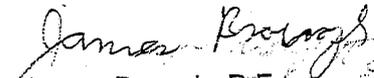
These General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage. The General Permits can be found under the Water Quality Division Water and Wastewater Program, Engineering and Technical Services at:

http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

If you have any questions, please contact Hannes Stueckler at 307-335-6964 or James Brough at 307-335-6961.

Sincerely,


Hannes E. Stueckler
Assistant Northwest District Engineer
Water Quality Division


James Brough, P.E.
Northwest District Engineer
Water Quality Division

xc: PDF to Cheyenne
William Bridges P.E., Pryor Mountain Engineering, Box 671 Cowley, WY 82420





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

November 3, 2009

Town of Rock River
Sam Vieyra, Mayor
P.O. Box 280
Rock River, WY 82083

RE: **Application Returned Number: 09-563**
Action: Application Returned- incomplete permit application

Facility: Rock River Water Treatment Plant Upgrade Design/Build Project
Location: Albany County

Dear Mr. Vieyra:

Your application with all submitted documents, number **09-563**, for a Rock River Water Treatment Plant Upgrade Design/Build Project, is being returned and the file closed. **Action: Not Authorized For Construction.**

These review comments indicated that this application could not be permitted as proposed because the application package had numerous deficiencies or incomplete. It states in **Chapter 3, Section 9(a)(ii)(A)** of Water Quality Rules and Regulations the following: Additional information shall be requested in detail or the application may be returned to the applicant. At this time, the application is being returned. Incomplete permit applications result in permit denial.

In addition, this application does not meet **Chapter 3, Section 6(b)(i) and Chapter 3, Section 6(b)(iii)** of Water Quality Rules and Regulations. Application for a permit to construct, install or modify must be accompanied by three copies of plans, specifications, design data or other pertinent information covering the project, and any additional information required by the administrator. All plans and specifications must conform to common and accepted engineering practices as determined by the administrator or as defined by applicable Water Quality Division regulations.

Lastly, this application does not meet **Chapter 12, Section 6** of Water Quality Rules and Regulations. **The design report is incomplete.** More specifically, the design report fails to isolate the DBP occurrences prior to proposing pretreatment that may or may be necessary. In addition, the design report fails to address operational and maintenance issues in the water system. When was the last time the tank was inspected and cleaned? How often is the tank re-circulated? Could the chlorine dose be minimized entering the tank and additional chlorine added latter in the system? Why is there a need to eliminate the gas chlorination system? The design report does provide jar tests. However, these tests do not accurately represent all seasons needed to propose pretreatment design.

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

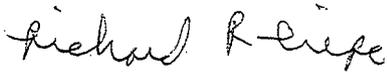
ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---



This project **has not been permitted**. Construction of this facility without a permit is a violation of the Environmental Quality Act and is punishable with fines not to exceed \$10,000 per day of violation. If you wish to reconsider construction of this facility, then the application process must be started over and the application procedures pursuant to Chapter 3 of the Wyoming Water Quality Rules and Regulations must be followed.

At some time in the near future, I would entertain a meeting with the Town of Rock River and the Engineer to discuss an outline of items needed to cover a complete Application. If you should have any questions, please contact Richard Cripe at either (307) 777-7075 or rcripe@wyo.gov. Please be reminded that the WQD could show up anytime in the future to verify that this facility was not constructed without a permit.

Sincerely,



Richard R. Cripe PE
Southeast District Engineer
Water Quality Division

RRC/rm/9-0999

Enclosures: Application Packages 09-563

cc: IPS

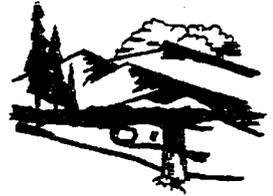
Jim Cavalli, Aspen- Banner Engineering, P.O. Box 550, Laramie, WY 82072

Mindy Mohr, EPA Region 8 Drinking Water Program, 1595 Wynkoop St., Denver, CO 80202-1129

Kathelene Brainich, EPA Drinking Water Enforcement, 1595 Wynkoop Street, Denver, CO 80202-1129



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

NOTIFICATION OF COVERAGE

October 19, 2009

Town of Manville
Richard Schroeder
P.O. Box 107
Manville, WY 82227

RE: Distribution System Rehabilitation,
Application No. **09-564**, Niobrara County

Dear Mr. Schroeder:

The above application for coverage under General Permit to Construct, Install, Modify or Operate Extensions to or Modifications of Existing Public Water Supply Distribution Systems and or Existing Sewage Collection Systems described as replacement of approximately 400 ft of 6 inch water line, replace three fire hydrants, and remove 2 cross connections (Bellflushers - service lines removed), W ½ Section 1, NE ¼ Section 2, T32N R 64W; Niobrara County, in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install or modify the water distribution system in accordance with Chapter 12, Section 14 of the Water Quality Division Rules and Regulations, the general permit and the materials submitted in your application package. All construction, installation, or modification allowed by this notification of coverage shall be completed by October 19, 2011.

This **Notice of Coverage** is covered under the General Permits on the Wyoming Department of Environmental Quality webpage. The General Permits can be viewed at the following path: http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp. Please reference Application No. **09-564** in any future correspondence.

If you have any questions, please contact me at 307-777-7075.

Sincerely,

Richard R. Cripe PE
Southeast District Engineer
Water Quality Division

RRC/rm/9-0918

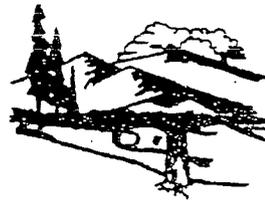
Enclosure: Certificate of Completion

cc: IPS, Cheyenne
Murray Schroeder, WWC Engineering, 611 Skyline Rd., Laramie, WY 82070





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

REVIEW OF PLANS AND SPECIFICATIONS

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY / WATER QUALITY DIVISION
122 West 25th Street, Herschler Building 4 West, Cheyenne, Wyoming 82002

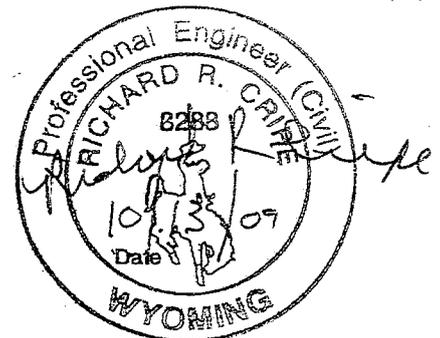
PROJECT: 2009-172; Distribution System Rehabilitation
ENGINEER: Murray T. Schroeder, P.E.
APPLICANT: Town of Manville

WATER QUALITY DIVISION REFERENCE NUMBER: 09-564
REVIEWING ENGINEER: Richard R. Cripe
DATE OF REVIEW: October 13, 2009

ACTION: NOT AUTHORIZED FOR CONSTRUCTION. In accordance with Section 14(a), Chapter 3, Wyoming Water Quality Rules and Regulations, the application is denied because it is incomplete or does not meet applicable minimum design and construction standards. Please address the comments outlined below and submit the requested information in order that the application process may be completed in accordance with said Section 9. If the applicant fails to provide the requested information within six months the incomplete application shall be returned.

COMMENTS, INADEQUACIES, AND QUESTIONS

- Chapter 12, Section 14 f (vii).** Bellflusher detail needs to be modified. The service line needs to be removed all the way to the water main.
- Chapter 12, Section 14 c.** The plans do not show all existing valves. A new 6" valve should be installed at the beginning of 6" water line.
- Chapter 12, Section 14 b and Section 14 d.** There are five fire hydrants on 4" dead end lines that will not be replaced because they violate our Ch12 regulations in two places. Have you considered flushing fire hydrants? The fire hydrant detail needs to be modified to reflect the replacement of the three remaining fire hydrants that are served by 6" lines.





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

November 2, 2009

Carbon County Commissioners
215 W. Buffalo Street, #304
P.O. Box 487
Rawlins, Wyoming 82301

Subject: **Non-Adverse Recommendation**, Old Baldy Village Ninth Addition Subdivision, Carbon County
DEQ/WQD Application # **09-565**

Dear Commissioners:

The Wyoming Department of Environmental Quality has completed the review of the proposed Old Baldy Village Ninth Addition Subdivision located in the N ½, Section 18, T17N, R83W, 6th P.M., in Carbon County, Wyoming. The Old Baldy Village Ninth Addition Subdivision will create 8 lots out of approximately 1.034 acres. The information was submitted by WWC Engineering, signed by Murray Schroeder, P.E., a Wyoming Licensed Engineer. This letter represents the recommendations of the Wyoming Department of Environmental Quality as required by W.S. 18-5-306(c).

Findings as to the safety and adequacy of the proposed sewage system:

The proposed sewage system to connect to an existing central sewage collection system owned and operated by the Old Baldy Club. The Town of Saratoga will provide sanitary sewer service. The information submitted addresses the safety and adequacy of the proposed sewage system.

Findings as to the safety and adequacy of the proposed water system:

The proposed water system is to connect to an existing public water supply distribution system owned and operated by the Old Baldy Club. The Old Baldy Club water system is a consecutive system that is supplied potable water by the Town of Saratoga Public Water Supply system. The information submitted addresses the safety and adequacy of the proposed water system.

Conclusions:

The Department of Environmental Quality has "No Adverse" recommendations applicable to the Old Baldy Village Ninth Addition Subdivision.

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---



November 2, 2009

Page 2

Disclaimer:

The Non-Adverse recommendation provided above has nothing to do with, nor has any bearing on the water rights associated with the Old Baldy Village Ninth Addition Subdivision. Any questions or concerns about the water rights for the Old Baldy Village Ninth Addition Subdivision should be directed to the State Engineer's Office.

Nothing in Department of Environmental Quality recommendations or comments regarding the WWC Engineering proposal for the Old Baldy Village Ninth Addition Subdivision shall be construed to relieve Roger Prenzlou of the obligation to obtain any permits or additional approval from any local, state or federal agencies as required by law, rules, regulations, or ordinances. Nothing in these recommendations commits the Department of Environmental Quality or Carbon County to the issuance of required permits for construction, operation, or modification of water supply or sewage systems.

Sincerely,



Richard Cripe, PE
SE District Engineer
Water & Wastewater Program, Water Quality Division

RRC /rm/9-0988

cc: Murray Schroeder, WWC Engineering, 611 Skyling Rd., Laramie, WY 82070

Roger Prenzlou, P.O. Box 707, Saratoga, WY 82331

Carbon County Planning & Development Dept., 215 W. Buffalo Street, #304, P.O. Box 487, Rawlins, Wyoming 82301

Michael Ebsen, SEO



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

NOTIFICATION OF COVERAGE

October 29, 2009

Craig LaVoy
City of Cheyenne
2101 O'Neil Ave., Suite 210
Cheyenne WY 82001

RE: Cheyenne Transfer Station Fire Main Loop;
Application No. **09-566**, Laramie County

Dear Mr. LaVoy:

The above application for coverage under General Permit to Construct, Install, Modify or Operate Extensions to or Modifications of Existing Public Water Supply Distribution Systems and or Existing Sewage Collection Systems described as installing approximately 1100 ft of 8 inch C900 DR18 (CLASS 235) PVC water line, installing approximately 515 ft of 10 inch C900 DR18 (CLASS 235) PVC water line, and installing three new fire hydrants; SE ¼ Section 3, T13N, R66W; Laramie County, in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install or modify the water distribution system in accordance with Chapter 12, Section 14 of the Water Quality Division Rules and Regulations, the general permit and the materials submitted in your application package. All construction, installation, or modification allowed by this notification of coverage shall be completed by October 29, 2011.

This **Notice of Coverage** is covered under the General Permits on the Wyoming Department of Environmental Quality webpage. The General Permits can be viewed at the following path:
http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp. Please reference Application No. **09-566** in any future correspondence.

If you have any questions, please contact me at 307-777-7075.

Sincerely,

Richard R. Cripe PE
Southeast District Engineer
Water Quality Division

RRC/bb/9-0977

cc: IPS, Cheyenne
James K. Murphy, AVI, 1103 Old Town Lane, Suite 101, Cheyenne, WY 82009
Herman Noe, Cheyenne Board of Public Utilities, P.O. Box 1469, Cheyenne WY 82003

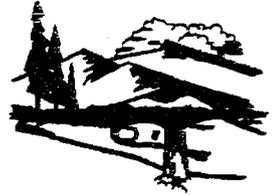
Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

December 28, 2009

Mr. Michael D. Roberts
Legend Services, Inc.
P.O. Box 146
Rock Springs, WY 82902

RE: 09-567, PR Fed 1510131i
Class I underground injection control application, Sweetwater County

Dear Mr. Roberts:

The questions attached below supplement those I sent you in my letter of December 15, 2009 and complete my review of Legend Services' application for a Class I well. If you have any questions, please contact me at (307) 777-2960 or glang@wyo.gov. Thank you for your patience.

Sincerely,

George D. Langstaff
UIC Program, Water Quality Division

GDL/rm/9-1133

cc: Kevin Frederick, Ground Water Protection and UIC, WDEQ
WDEQ UIC file

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---



UNDERGROUND INJECTION CONTROL PROGRAM
REVIEW QUESTIONS:

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION

Herschler Bldg., 4 West
Cheyenne, Wyoming 82002
307-777-7781

PROJECT: Application 09-567; PR Fed 15101-31i

LOCATION: Section 31, Township 15 North, Range 101 West
Sweetwater County

APPLICANT: Orvie Berg, President
Legend Services, Inc.
P.O. Box 146
Rock Springs, WY 82901

OWNER: Legend Services, Inc.

CONSULTING GEOLOGIST: Lynette D.W. George

CONSULTING ENGINEER: Michael D. Roberts
Legend Services, Inc.
P.O. Box 146
Rock Springs, WY 82901

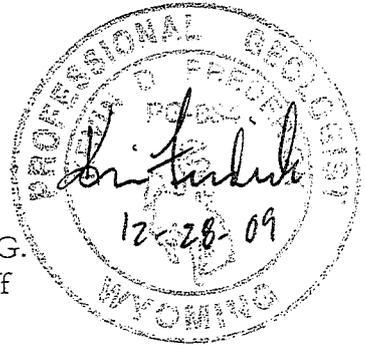
TITLE: "Class I Application Permit"

DATE ON APPLICATION: July 24, 2009

DATE RECEIVED BY WDEQ: July 28, 2009

WDEQ REVIEWER: Kevin Frederick, P.G.
George D. Langstaff

DATE OF THIS REVIEW: December 22, 2009



WDEQ Questions:

Although your cone of influence (COI) calculation conforms to Underground Injection Control Program, Water Quality Division, Wyoming Department of Environmental Quality, Guidance Document No. 1 – Permitting of Class I Injection Wells (GD#1), that document doesn't address some of the factors relevant to PR Fed 15101-31i. For clarity, I have repeated and verified your calculations and then recalculated the COI radius with parameters which I think are more appropriate. The differences are summarized in the following two tables and discussed below.

Table 1. Heads and Injection Rates

Parameter	July 09 Values	Dec. 09 Values
Depth to Water Table or Potentiometric Surface in Lowermost USDW (D_w)	0 ft	0 ft
Depth to Bottom of Injection Zone (D_b)	3,505 ft	not used
Head of USDW above Bottom of Injection Zone ($H_u = D_b - D_w$)	3,505 ft	not used
Depth to Top of Injection Zone (D_t)	not used	3,416 ft
Head of USDW above Bottom of Injection Zone ($H_u = D_t - D_w$)	not used	3,416 ft
Pressure Gradient in Receiver (grad)	0.371 psi/ft	.40 psi/ft
Pressure at Bottom of Injection Zone ($P_t = \text{grad} * D_b$), or	1,300 psi	not used
Pressure at Top of Injection Zone ($P_t = \text{grad} * D_t$), or	not used	1,366 psi
Total Dissolved Solids	25,000 mg/L	25,000 mg/L
Temperature in Receiver	not specified	93 °F
Density (ρ)	1.0089 g/cm ³	1.0153 g/cm ³
Head in Injection Zone (H_i)	3,003 ft	3,156 ft
Critical Head Change (ΔH_c)	502 ft	260 ft
Density Adjusted Head in Injection Zone (H_i)	3,030 ft	3,204 ft
Critical Head Change Adjusted for Density of Injection Zone Fluid (ΔH_c)	475 ft	212 ft
Duration of Injection (t)	10 years + 780 days	30 years + 795 days
Injection Rate (q) (1-stage)	837 bbl/day 4,698 ft ³ /day	561 bbl/day 3,149 ft ³ /day

Table 2. Hydrologic and Reservoir Properties of Receiver

Parameter	July 09 Values	Dec. 09 Values
Permeability (k)	10.20 md $1.0 \times 10^{-10} \text{ cm}^2$	10.20 md $1.0 \times 10^{-10} \text{ cm}^2$
Temperature in Receiver	?	93 °F @ 3,461 ft for 14 °F/1000 ft
Viscosity (μ)	.8400 cP .0084 g/cm-s	.7600 cP .0076 g/cm-s
Gravitational Acceleration (g)	?	980 cm/s^2
Hydraulic Conductivity (K) $K = k \cdot \rho \cdot g / \mu$	$1.135 \times 10^{-5} \text{ cm/s}$.0336 ft/day	$1.323 \times 10^{-5} \text{ cm/s}$.0375 ft/day
Thickness of Injection Zone (L)	89 ft	64 ft
Transmissivity (T) $T = K \cdot L$	3.0 ft^2/day	2.4 ft^2/day
Total Compressibility (c_t) (derived from chosen S in this case)	$1.35 \times 10^{-5} \text{ psi}^{-1}$	$1.36 \times 10^{-5} \text{ psi}^{-1}$
Porosity (Φ)	0.17	0.17
Storativity (S) $S = L \cdot c_t \cdot \Phi \cdot 433$ or $S = L \times 10^{-6}$	8.9×10^{-5}	6.4×10^{-5}
Radius of Influence for 1-Stage Pumping (r_i)	2,766 ft	11,394 ft
Radius of Influence for 3-Stage Pumping (r_i)	665 ft	9,100 ft
Radius of Pure Waste Cylinder (r_w)	662 ft	1,041 ft
Radius of Area of Review (r_a)	5,280 ft	9,100 ft

D_w : Assuming that the depth to the potentiometric surface in the lowest USDW is 0 ft (online application, section A) is somewhat optimistic but I can't justify any other choice.

D_b , D_i : GD#1 stipulates that heads should be measured from the bottom of the injection zone. This is not a problem if pressure in the well is measured with a down hole gauge. However, use of a formation pressure gradient to determine receiver pressure violates the assumption of constant head inherent in the COI equation and, in such cases, calculating the pressure at the top of the injection zone gives a more conservative (larger) radius.

grad: The receiver pressure gradient was not specified in the application so I calculated it from the 3,005 ft of head entered in the online application. The result, 0.371 psi/ft, seems unusually low for an aquifer only 28,000 ft from the outcrop where it reaches an elevation up to 800 ft higher than the well elevation. My choice of 0.40 psi/ft is still relatively low but, I believe, more realistic. If the bottom hole pressure had been measured, gauge calibration could be an issue. The step-rate test (section C) apparently starts with a bottom hole pressure of 1,500 psi but with the middle of the perforated interval at 3,461 ft, this implies a formation pressure gradient which is exactly hydrostatic for fresh water. If this were the case, the radius of the COI would be infinite. If PR Fed 15101-31i is permitted as a Class I well, Legend Services will be required to conduct a pressure fall-off test within a year of permit issuance and annually thereafter (Chapter 13. Section 13.e.). The provisional COI radius calculated prior to permit issuance will be revised based on the pressures (and permeability, etc.) measured during the test.

g: Fluid density is necessary to calculate head in the receiver from pressure in the receiver. GD#1 refers only to a correction to account for density differences due to differences in total dissolved solids (TDS). In some cases, the effect of higher temperature deeper in the hole reduces the density more than the increase in TDS increases it. I estimated a temperature of 93 °F using a geothermal gradient of 14 °F/1000 ft (Buelow, Heasler, and Hinckley, 1986, Table 1). To account for fluid density changes due to temperature, pressure, and TDS, I used the tables of Lide and Haynes (2009, p. 6-142) for 0.25 and 0.5 molal NaCl solution (TDS of 14,600 and 29,200 mg/L) to interpolate a specific volume of 0.98899 cm³/g and an isothermal compressibility of 2.995 x 10⁻⁶ psi⁻¹ at 34 C (93 °F). The specific volume would be 0.98492 cm³/g at the estimated receiver pressure of 1,384 psi. The resulting density of 1.0153 g/cm³ is close to the interpolated density of 1.0151 g/cm³ from Table A-15 of Pitzer, Pelper, and Busey (1984) for 0.25 and 0.5 molal NaCl solutions at 34 C and 200 bar (2,900 psi) corrected to receiver pressure using the compressibility of Lide and Haynes (2009). The fact that 1.0153 g/cm³ is greater than the GD#1 TDS-corrected density suggests the rule of thumb used in GD#1 under-corrects for TDS. This is confirmed by comparison of the GD#1 TDS-corrected densities with those in Lide and Haynes (2009) at 20 C (68 °F) and 1 bar. GD#1 densities range from about 0.03% less at 0.1 molal NaCl to about 1.76% less at 1 molal NaCl. A 1% error in density could generate errors of 50 ft or more, depending on depth, in the radius of the cone of influence.

H_i, ΔH_c: The higher formation pressure gradient and use of the top of the injection zone as datum results in a higher head in the injection zone – 3,156 vs. 3,003 ft – and a much smaller critical head change (head change in the receiver required to raise the receiver pressure to the pressure of the overlying USDW). The density correction further reduces the critical head change. This increases the COI radius.

t: Section A uses an injection duration of 10 years and adds 780 days to account for historical injection as a Class II well. However, the project life is given as 30 years on federal form 299 (section A). Because Class VI designation is tied to a fixed radius from an injection well, the ultimate limit of the cone of influence rather than the radius after the permitted 10 years is a better basis for classification. It is preferable to overestimate rather than to underestimate the cone of influence and there are no penalties for overestimation if no other water wells or inadequately plugged wells are impacted.

q: Injection records available from the Wyoming Oil and Gas Conservation Commission web site indicate that PR Fed 15101-31i injected 2,274,886 barrels in 681 days. I chose to average the injection over a period of 795 days, including the intervening days of no injection. For the COI calculation, I added the 795 days to 30 years and averaged pumping over the entire period, as you did for 10 years and 780 days, because the method assumes continuous injection. The anticipated injection rate of 12,000 bbl/month averages out to 394 bbl/day. This results in an average injection rate of 561 bbl/day for the 30+ year period as opposed to 837 bbl/day for the 10+ year period. The longer injection period increases the total volume of injected waste and consequently both the radius of the COI and the radius of emplaced waste.

k, μ: I used the same permeability as that indicated in the online application, 1.0 x 10⁻¹⁰ cm², and converted that to permeability in millidarcy. The viscosity of .0084 g/cm-s seems too high for a formation temperature of 93 °F. Viscosities of pure water at various temperatures and pressures can be downloaded from the NIST WebBook, or at 1 atm (15 psi) pressure and various temperatures, at

http://www.thermexcel.com/english/tables/eau_atm.htm. Pressure corrections are negligible. Viscosity of pure water at 34 C is .73 centipoise. Fig. D-16 in Lee (1984) indicates salinity increases viscosity but not to more than 0.8 centipoise.

K: Lower viscosity results in a slightly higher calculated hydraulic conductivity.

L: The online application gives an injection zone thickness of 89 ft, the entire perforated interval, which is consistent with GD#1. However, the well log (section C) suggests the intervals between the perforated intervals would be significantly less permeable and may not be aquifers at all. In this case, a net perforated thickness of 64 ft seems more appropriate.

c_p , Φ , S: Storativity is calculated according to GD#1 so the values of compressibility and porosity are not needed. Porosity, however, is used in the calculation of the radius of emplaced waste. The smaller aquifer thickness results in a smaller value of storativity.

r_i (COI): My calculation of the radius of the cone of influence using the July 09 parameters supplied by Legend Services results in a slight difference that is probably due to significant-digit differences. Repeating the calculation with the Dec. 09 parameters I chose results in a much larger cone of influence. This is due primarily to the smaller critical head change and also due to the greater total volume of injected waste as a result of the longer pumping period.

Because of the long separation of time between the historical injection and the start of Class I injection, treating the historical injection as part of a continuous injection period ignores the pressure decay after August 2006 and overestimates the extent of the cone of influence after 10 or 30 years of future injection. Consequently, I have used the Theis equation with superposition to better estimate the effects of the historical injection. The 3-stage pumping model for a 10+ year injection period includes injection of 2,861 bbl/day (16,063 ft³/day) for 5,755 days from May 29, 2004 to March 1, 2020, withdrawal of -2,861 bbl/day (16,063 ft³/day) for 4,960 days to simulate shutting the well in on August 2, 2006, and finally injection of 394 bbl/day (2,212 ft³/day) for 3,653 days from March 1, 2010 to March 1, 2020. For a 30+ year injection period, all the stages are lengthened accordingly. The 3-stage model dramatically reduces the cone of influence for the 10+ year injection period but has a lesser effect on the 30+ year period because in that case the historical injection is a smaller fraction of the total injected volume.

r_w : Due to the greater volume of waste for the 30+ year injection period, the radius of the volume of emplaced waste is larger. However, it is much less than the radius of the COI.

r_a : In the online application, the radius of the area of review was given as 5,280 ft. The maps in sections B and C used 1,320 ft. The radius of the area of review based on my calculations is 9,100 ft because it is the larger of: the radius of the COI, the radius of emplaced waste, or 1,320 ft.

1. Area of Review (Chapter 13. Section 5.b.iv):

- A. If Legend Services accepts my calculations of the radius of the area of review, please submit an updated topographic map showing the radius of the area of review and a list of the 160-acre quarter-quarter sections partially or wholly included within the radius of the area of review. List, or show on a map, any water wells, oil wells, or gas wells within that radius. Provide any plugging and abandonment records for wells within the area of review not included in the original application (including the wells

that were scheduled for plugging and abandonment in 2009 and were not available in July 2009).

- B. If Legend Services does not accept my calculations, please provide alternate calculations. Documentation of depth to water in the lowermost USDW, formation pressure gradients or measured pressures in the receiver, permeability, injection rate, and injection period are particularly important. Update the area of review map and lists accordingly.
- C. Legend Services could consider additional perforations in the Trail Member to reduce the radius of the area of review if the initial pressure fall-off test confirms the Dec. 09 parameter values in Tables 1 and 2.
- D. A radius of influence of 9,100 ft will include most of the state land in section 36, T15N, R102W. Consequently, the Office of State Lands and Investments will be given the opportunity to express any concerns they may have about Legend Services' proposed operation.

2. Maximum Surface Injection Pressure (Chapter 13. Section 5.b.vi, Section 18.b.ii):

A step-rate test is required for new Class I wells within 1 year of the issuance of the permit (Chapter 13. Section 9.d.ii). Although a step-rate test was conducted for PR Fed 15101-31i, the poor quality of the data for injection rates <5 bbl/min (section E) precludes confident interpretation. Moreover, the nearly constant pressure for injection rates above 12 bbl/min suggests the possibility of open fractures or a leak in the injection system. It's possible the formation parting pressure was exceeded at the first injection rate of 3.7 bbl/day. Consequently, Legend Services will be required to conduct another step-rate test within 1 year of permit issuance. A preliminary estimate of limiting surface pressure (LSP) to be used until a successful step-rate test has been completed is given below. This differs from the 229 psi shown on the online application.

Table 3. Calculation of Limiting Surface Pressure

Parameter	Value
Depth to Top of Injection Zone	3,416 ft
Total Dissolved Solids of Injectate	25,000 mg/L
Density of Injectate at 20 C and 1 atm (ρ_i)	1.0135 g/cm ³
Injectate Fluid Pressure Gradient ($\text{grad}_i = \rho_i * 2.54^2 * 30.48 / 453.59$)	0.4394 psi/ft
Pressure from Top of Injection Zone ($P_i = D_i * \text{grad}_i$)	1,501 psi
Receiver Fracture Gradient (F_r)	0.50 psi/ft (assumed)
Fracture Pressure at Top of Receiver ($P_f = F_r * D_i$)	1,708 psi
Pressure Loss due to Tubing (P_T)	0 psi
Pressure Loss due to Perforations (P_p)	0 psi
Limiting Surface Pressure ($\text{LSP} = 0.9 * [P_f - P_i + P_T + P_p]$)	186 psi

Although GD#1 stipulates that pressures be measured from the bottom of the injection zone, fractures at the top of the injection zone would be more likely to impact overlying USDWs so the LSP calculated above measures pressures from the top of the injection zone. Because a fluid with a constant pressure gradient does not have constant head, greater depths have lower heads than shallower depths and consequently lower LSPs. The fracture gradient used above is the one given in the online application (section A). Due to uncertainties about the temperature of the injectate in the borehole, injectate density has been corrected for TDS but not for temperature or pressure. Density of the injectate at 20 C (68 °F) and 1 atmosphere pressure was interpolated from Lide and Haynes (2009). The production records downloaded from the Wyoming Oil and Gas Conservation Commission web site indicates tubing pressures were 745 to 915 psi during injection. If the assumption of fracture gradient is correct, then fractures may have been created during historical injection in PR Fed 15101-31i.

- A. If Legend Services would like to initially inject at greater than 186 psi, please justify a higher limiting surface pressure.
3. Injectate Monitoring (Chapter 13. Section 5.b.xi.A, Section 13.g,h):
- A. Injection wells which dispose of produced water and miscellaneous oil field wastes are typically required to analyze injectate samples for the parameters shown in Table 4 (from UIC Class I permit 07-595, another produced water disposal well) below. Please outline your injectate monitoring plan, including analytes, analytical methods, sampling methods, and quality assurance procedures, such as collecting blanks and duplicates. This plan should cover the possibility that Legend Services would be required to analyze additional samples of injection zone fluid. If PR Fed 15101-31i injects waters produced from different oil or gas fields with different chemical characteristics, Legend Services may need to sample more frequently than quarterly to insure that results are representative (Chapter 13. Section 14.a).

Table 4. Typical Analytes for Oilfield Produced Water

EPA Analytic Method	Parameter Analyzed	CAS Number	Proposed Permit Limit or UCL (mg/L)
SM2540	Total Dissolved Solids	None	*
376.1	Hydrogen Sulfide	7783-06-4	*
SM4500H+B	pH	None	>2 - <11 s.u.
206.5	Arsenic (metal)	7440-38-2	*
239	Lead (metal)	7439-92-1	*
245	Mercury (metal)	7439-97-6	*
375.2	Sulfate	None	*
420	Total Phenolic Hydrocarbons	108-95-2	*
624	1,1,1,2-Tetrachloroethane	630-20-6	*
624	1,1,1-Trichloroethane	71-55-6	*
624	1,1,2,2-Tetrachloroethane	79-34-5	*
624	1,1,2-Trichloroethane	79-00-5	*

624	1,1-Dichloroethane	75-34-3	*
624	1,1-Dichloroethene	75-35-4	*
624	1,1-Dichloropropene	563-58-6	*
624	1,2,3-Trichlorobenzene	87-61-6	*
624	1,2,3-Trichloropropane	96-18-4	*
624	1,2,4-Trichlorobenzene	120-82-1	*
624	1,2,4-Trimethylbenzene	95-63-6	*
624	1,2-Dibromo-3-chloropropane	96-12-8	*
624	1,2-Dibromoethane	106-93-4	*
624	1,2-Dichlorobenzene	95-50-1	*
624	1,2-Dichloroethane	107-06-2	*
624	1,2-Dichloropropane	78-87-5	*
624	1,3,5-Trimethylbenzene	108-67-8	*
624	1,3-Dichlorobenzene	541-73-1	*
624	1,3-Dichloropropane	142-28-9	*
624	1,4-Dichlorobenzene	106-46-7	*
624	2,2-Dichloropropane	590-20-7	*
624	2-Chloroethyl vinyl ether	110-75-8	*
624	2-Chlorotoluene	95-49-8	*
624	2-Hexanone	591-78-6	*
624	4-Chlorotoluene	106-43-4	*
624	Acetone	67-64-1	*
624	Acetonitrile	75-05-8	*
624	Acrolein	107-02-8	*
624	Acrylonitrile	107-13-1	*
624	Benzene	71-43-2	*
624	Bromobenzene	108-86-1	*
624	Bromochloromethane	74-97-5	*
624	Bromodichloromethane	75-27-4	*
624	Bromoform	75-25-2	*
624	Bromomethane	74-83-9	*
624	Carbon disulfide	75-15-0	*
624	Carbon tetrachloride	56-23-5	*
624	Chlorobenzene	108-90-7	*
624	Chlorodibromomethane	124-48-1	*
624	Chloroethane	75-00-3	*
624	Chloroform	67-66-3	*
624	Chloromethane	74-87-3	*
624	cis-1,2-Dichloroethene	156-59-2	*
624	cis-1,3-Dichloropropene	10061-01-5	*
624	Dibromomethane	74-95-3	*
624	Dichlorodifluoromethane	75-71-8	*
624	Ethyl Acetate	141-78-6	*
624	Ethylbenzene	100-41-4	*
624	Hexachlorobutadiene	87-68-3	*
624	Iodomethane	74-88-4	*

624	Isopropylbenzene	98-82-8	*
624	m+p-Xylenes	1330-20-7	*
624	Methyl ethyl ketone	78-93-3	*
624	Methyl isobutyl ketone	108-10-1	*
624	Methyl tert-butyl ether (MTBE)	1634-04-4	*
624	Methylene chloride	75-09-2	*
624	n-Butylbenzene	104-51-8	*
624	n-Propylbenzene	103-65-1	*
624	Naphthalene	91-20-3	*
624	o-Xylene	95-47-6	*
624	p-Isopropyltoluene	99-87-6	*
624	sec-Butylbenzene	135-98-8	*
624	Styrene	100-42-5	*
624	tert-Butylbenzene	98-06-6	*
624	Tetrachloroethene	127-18-4	*
624	Toluene	108-88-3	*
624	trans-1,2-Dichloroethene	156-60-5	*
624	trans-1,3-Dichloropropene	10061-02-6	*
624	Trichloroethene	79-01-6	*
624	Trichlorofluoromethane	75-69-4	*
624	Vinyl acetate	108-05-4	*
624	Vinyl chloride	75-01-4	*
624	1,2-Dichloroethene (Total)	540-59-0	*
624	BETX, Total	BETX	*
624	Xylenes, Total	1330-20-7	*

4. Annual Pressure Fall-off Test (Chapter 13. Section 13.e):

A. Please outline your plans for conducting annual pressure fall-off tests. Because PR Fed 15101-31i will not have a continuous waste stream, it would be particularly important to determine how much fluid would be needed on site to establish an injection period long enough to allow an adequate fall-off (shut-in) test. If the injection rate were held constant, then analysis of both injection and fall-off periods would improve the reliability of the parameters determined.

5. 5-Year Mechanical Integrity Test (Chapter 13. Section 9.d,vii):

A. The mechanical integrity test for a Class I well consists of 2 parts as described in Chapter 13. Section 9.d.vii. The test of PR Fed 15101-31i conducted in January 2008 would satisfy part I. A temperature log and radioactive tracer test are usually used to demonstrate lack of vertical fluid movement outside the casing and to satisfy part II. Both parts must be completed before injection can be allowed. Please outline your plans for conducting a mechanical integrity test prior to injection and at 5-year intervals thereafter.

6. Recordkeeping and Reporting (Chapter 13. Section 5.b.xi.B, Section 13.b, Section 15.):

- A. Please clarify the use of the chart recorder to record injection pressures. Will the chart be changed after each day of injection or after some other period?
- B. Please describe how the annulus pressures will be recorded.

- C. With the preliminary limiting injection pressure (#2 above) so much less than past injection pressures, how will Legend Services ensure that the gauges and chart recorders installed will have the range and precision necessary to faithfully record injection pressures?
7. Well Construction (Chapter 13. Section 5.b.xi.B, Section 11.a):
- A. Class I wells are typically required to maintain annulus pressures of 200-800 psi but the wellhead diagram in section D doesn't show anything connected to the annulus valve. How will Legend Services maintain the annulus pressure?
8. Operator Training and Laboratory and Process Controls (Chapter 13. Section 9.d.vi):
- A. Please describe plans to insure operators are adequately trained on operating and monitoring PR Fed 15101-31i.
 - B. Since Legend Services will probably use a commercial laboratory for injectate analyses, it would be helpful for Legend Services to identify a laboratory that has adequate experience with the EPA methods listed in #3 above and has appropriate quality control procedures.

References:

Buelow, K.L., Heasler, H.P., and Hinckley, B.S., 1986, Geothermal resources of the Powder River Basin, Wyoming: Geological Survey of Wyoming, Report of Investigations No. 36, 32 p., 4 plates.

Lee, J.W., 1984, Well testing: Society of Petroleum Engineers, Text Book Series, No. 1.

Lide, D.R. and Haynes, W.M. (eds.), 2009, CRC Handbook of Chemistry and Physics (90th ed.): CRC Press, Boca Raton, Florida (available at Hay Library, Western Wyoming Community College)

Pitzer, K.S., Pelper, J.C. and Busey, R.H., 1984, Thermodynamic properties of aqueous sodium chloride solutions: Journal of Physical Chemistry Reference Data, v. 13, no. 1, 102 p. (downloaded from the NIST web site)

End of Questions



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

April 6, 2010

Mr. Orvie E. Berg
Legend Services, Inc.
P.O. Box 146
Rock Springs, WY 82902

RE: 09-567, PR Fed 1510131i
Class I underground injection control application, Sweetwater County

Dear Mr. Berg:

After reviewing Legend Services' responses to WDEQ's questions of December 15 and 28, 2009 and the information provided at the March 15, 2010 meeting in Cheyenne, WDEQ considers the Class I application for the PR Fed 15101-31i well complete. However, some challenges for drafting a permit remain. The purpose of this letter is to summarize the findings since the application was submitted and to prepare the framework for a draft permit.

Responses to December 15, 2009 Questions:

I. Hydrogeology of Lowest Underground Source of Drinking Water and Confining Zones (Chapter 13, Section 5.b.vi, Section 12.a.b.i.ii,c.i.ii):

A letter report prepared by Lynette D.W. George demonstrated that the Rusty Zone of the Ericson Sandstone is an adequate confining zone for waste injected into the Trail Member and provided additional evidence that water in aquifers below the Ericson generally have total dissolved solids (TDS) concentrations above 10,000 mg/L or R_w less than 0.61 ohm-m.

The water quality analysis obtained for the Ericson in PR Fed 15101-31i is suspected of being contaminated by KCl drilling fluid. It has 7,027 mg/L potassium and only 4,744 mg/L sodium. Assuming all the potassium is due to contamination and subtracting equivalent moles of chloride, the non-contaminated TDS of the receiver sample could be as low as 12,000 mg/L.

Legend Services provided a water analysis from PR Fed 15101-31 (API #49-037-2553), which was apparently completed in the upper 50 ft of the Ericson Sandstone (i.e., Canyon Creek Member). This is a Na-Cl-HCO₃ water with TDS of 13,605 mg/L and pH of 8.06.

Consequently, WDEQ concludes that whether or not the Canyon Creek Member of the Ericson Sandstone is an underground source of drinking water (USDW), it would not be endangered by waste injected into PR Fed 15101-31.

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---



II. Seismicity (Chapter 13, Section 12.b.i):

The maps submitted by Legend Services indicate the nearest active fault is near the northern boundary of Sweetwater County and the seismic hazard at PR Fed 15101-31i is low.

III. Mineral Resources (Chapter 13, Section 12.b.ii):

The letter report by Ms. George discussed the oil and gas potential in the vicinity of PR Fed 15101-31i. It appears that waste injection will not impede any likely mineral resource development.

IV. Nature of Injected Fluid (Chapter 13, Section 5.b.v.A):

Legend Services affirmed that the injectate will consist only of groundwater produced incidentally to the production of oil, natural gas, or coalbed methane and “no tank bottoms, oil wastes, drilling or workover fluids or sump wastes”. Legend Services also delivered 9 water analysis reports supplied by potential customers, Questar Applied Technology Services and Warren E&P. Sodium is the dominant cation in all waters and the anions are listed in Table 1. The Warren E&P sample also had 21.2 mg/L total petroleum hydrocarbons and 70 mg/L total suspended solids.

Table 1. Produced Water Samples

Field	Well Name	TDS	pH	Cl ⁻	SO ₄ ²⁻	HCO ₃ ⁻
Bruff	Lansdale Fed. 4-5	7,330	7.15	3,550	32	1,200
Bruff	Bruff 54	7,420	6.97	4,000	225	300
Powder Wash	JC Donell #15	1,500	7.88	1,500	6	1,500
Powder Wash	Carl Allen #33	4,916	7.8	1,050	77	2,200
Powder Wash	Carl Allen #16	3,359	5.27	1,600	120	300
Powder Wash	Carl Allen #17	46,469	6.55	28,450	46	200
Powder Wash	BW Musser #29	8,369	7.33	4,250	0	1,000
Powder Wash	Hal Stewart #6	7,044	7.96	2,650	0	2,000
Warren E&P RS-11331		9,190	7.69	3,390	1	2,160 (alk)

Legend Services identified the scale inhibitor Gypton T-379 and the biocide Bactron K-31W as routine additives to the waste stream. Both have pH less than 5.

In light of this additional data, WDEQ will require Legend Services to collect water quality reports representative of the waste to be injected from each producer prior to injection and to preserve this information for the life of this permit. At a minimum, each report will include results for pH, TDS, sodium, calcium, chloride, bicarbonate, and sulfate. Specific conductance, specific gravity, and hydrogen sulfide are recommended. Hydrogen sulfide gas is toxic and Legend Services employees should be aware of its presence. Legend Services will append the following information to each water quality report if it is not already included: producer company name, well name, well API number, well location coordinates (UTM NAD 83 is preferred but decimal degrees are acceptable if the datum is specified), well section – township – range, county, stratigraphic name and depth interval of the producing zone, and field name.

For injectate monitoring in the quarterly reports, Legend Services will compile all the producer water quality reports for water injected during that quarter in a spreadsheet format and submit the tabulated data to WDEQ. In addition, Legend Services will spot check at least one produced water delivery during each quarter by collecting a representative water sample and analyzing the sample for the parameters and analytes listed in Table 2. The absolute and percentage differences between Legend Services' results and those of the producer will be included in the quarterly report. Legend Services will collect a duplicate injectate sample annually, with at least 50 minutes separating the sample collection times. All quarterly samples will include a trip blank of deionized water. Chain-of-custody procedures will be followed for all samples.

Table 2. Injectate Analytes and Parameters in Quarterly Reports

EPA Analytical Method	Analyte or Parameter	Precision
120.1	Specific Conductance	10 μ S/cm
SM4500-H ⁺ B	pH	0.01 s.u.
SM2550 B	Temperature	0.1 C
	Specific Gravity	0.0001
SM2540	Total Dissolved Solids	10 mg/L
200.7	Calcium, Sodium	1 mg/L
300.1	Chloride, Sulfate	1 mg/L
SM2320 B	Bicarbonate	1 mg/L
1664A	Oil and Grease (n-hexane extractable)	1 mg/L

Note: Methods preceded by "SM" are standard methods.

V. Well Construction (Chapter 13. Section 5.b.v.B, Chapter 13. Section 11.a,b,c):

Legend Services provided additional details on the casing and tubing and confirmed that a tailpipe assembly extends 10 ft below the packer.

Legend Services affirmed that the steel used in the casing and tubing is "acceptable for corrosive environments."

VI. Plugging and Abandonment (Chapter 13. Section 17.b):

Legend Services affirmed that the \$17,500 bid obtained from Continental Industries Field Services of Casper, Wyoming, covers all the costs associated with plugging and abandoning PR Fed 15101-31i and provided more details on how the plugging would be accomplished. 100 sacks of cement would be used to plug the hole from 3,300 to the plug-back depth of 4,128 ft (volume of 183 ft³). 50 sacks would be used to set a plug at 1,450-1,800 ft (volume 77 ft³). A final plug at 3-50 ft would require 10 sacks of cement (volume 10 ft³). Legend Services states that the maximum it would have to pay for cement would be \$2,600 (200 sacks at \$13/sack) notwithstanding the \$23/sack cost in the Continental bid.

Although Legend Services could plug PR Fed 15101-31i for \$17,500, or even less, the purpose of bonding is to ensure that Wyoming could plug the well in the event Legend Services fails. The Legend Services estimate implies a cost of \$4.25/ft to plug the well. WDEQ doubts that \$4.25/ft would be sufficient for Wyoming to contract for plugging a 4,100 ft deep well now or at some time

in the future. The Wyoming Oil and Gas Conservation Commission currently requires bonding at \$10/ft for idle wells. At the March 15 meeting, Legend Services declined to bond the plugging and abandonment of PR Fed 15101-31i at \$41,280 (\$10/ft x 4,128 ft) but instead agreed to collect 2 more bids in addition to the bid of Continental Industries for the plugging and abandonment of PR Fed 15101-31i. The 2 additional bids were received by WDEQ on March 29-31: \$27,380 by Bernard Well Service of Rangeley, Colorado, and \$22,500 by Searle Brothers Construction of Rock Springs. WDEQ will require the bond amount to be at least the average of the 3 bids, \$22,460.

Because injected waste could migrate within the receiver from perforation depths to shallower depths in the Trail Member, the proposed plugging plan does not completely isolate the Trail Member from shallower aquifers. If the casing eventually deteriorates, waste could migrate up the borehole into the Canyon Creek Member, the presumptive USDW, and the Almond Formation. WDEQ recommends that Legend Services modify its plugging and abandonment plan to set a cement plug at 3,050 feet (100 feet above the top of the Trail Member) to 3,250 feet (100 feet below the top of the Trail Member) rather than at 3,300 feet to 4,130 feet. The proposed plug at 1,450-1,800 feet will effectively isolate the Almond Formation from any aquifers above the Lewis Shale.

An email exchange between Mike Roberts of Legend Services and Pete Vogel, Barb Barnes, and Deanna Hill of WDEQ in July 2009 apparently did not resolve the question of how Legend Services would provide financial assurance for plugging and abandonment of PR Fed 15101-31i. Now that the amount to be bonded has been settled (see previous paragraph), Legend Services should choose what type of financial instrument it will use. If Legend Services chooses a check, certificate of deposit, or letter of credit, Barb Barnes (307-777-5632; bbarne@wyo.gov) can provide directions on the proper format to use. For a surety bond, Deanna Hill (307-777-6910; dhill@wyo.gov) should be contacted. In any case, the sole payee or beneficiary must be the Wyoming Department of Environmental Quality. Instructions for a certificate of deposit, a letter of credit template, and surety bond form are attached to this letter.

Responses to December 28, 2010 questions:

1. Area of Review (Chapter 13, Section 5.b.iv):

Although the lifetime of injection at PR Fed 15101-31i cannot be predicted with any certainty, the assumption of a 30-year lifetime provides a means to obtain a conservative estimate of all wells penetrating the confining zone that could potentially be affected by injection activities. Legend Services submitted a map showing the oil and gas wells within, or close to, a 9,100 feet radius of PR Fed 15101-31i. These are summarized in Table 3 below. A similar map distinguishing wells by penetration status is attached as Figure 1.

Table 3. Oil and Gas Wells Within the 30-year Radius of Influence of PR Fed 15101-31i

API No.	Northing	Easting	Total Depth	Bottom Formation	Penetrates Ericson?	Status	Distance from Disposal Well
37-25662	4,567,387	682,521	4,200	Ericson	yes	Injection	
37-05213	4,567,920	682,875	7,375	Baxter	yes	Plugged	2,100 feet
37-25101	4,567,938	682,851	2,550	Almond	no	Plugged	2,110 feet
37-25532	4,567,031	682,674	2,564	Ericson	upper	Plugged	1,270 feet
37-25533	4,566,984	681,825	2,262	Ericson	upper	Plugged	2,640 feet
37-25522	4,567,704	681,888	2,120	Almond	no	Plugged	2,320 feet
37-20241	4,568,256	681,337	3,596	Rock Springs	yes	Plugged	4,820 feet
37-25538	4,568,487	682,774	2,320	Almond	no	Shut-in	4,027 feet
37-25622	4,568,368	682,872	2,669	Almond	no	Shut-in	3,420 feet
37-26080	4,569,267	681,708	2,709	Ericson	upper	Shut-in	6,720 feet
37-26053	4,569,294	682,602	2,985	Ericson	upper	Shut-in	6,260 feet
37-26008	4,568,538	683,409	3,086	Ericson	upper	Shut-in	4,770 feet
37-26007	4,569,368	683,416	3,210	Ericson	upper	Shut-in	7,130 feet
37-26054	4,568,529	684,197	3,160	Ericson	upper	Shut-in	6,650 feet
37-25537	4,567,799	683,457	2,810	Almond	no	Shut-in	3,360 feet
37-26011	4,567,754	684,208	3,115	Ericson	upper	Shut-in	5,670 feet
37-20731	4,565,842	680,126	4,000	Chimney Rock	yes	Plugged	9,350 feet
37-25067	4,566,881	681,317	1,928	Almond	no	Plugged	4,280 feet
37-25518	4,567,738	681,092	2,046	Ericson	upper	Plugged	4,830 feet

Most of the wells targeted coalbed methane in the Almond Formation. Those that penetrated the Ericson Formation generally stopped within 200 feet of the top and consequently did not breach the rusty zone confining layer at 250-400 feet below the top of the Ericson. The shut-in wells are scheduled for plugging and abandonment and are unlikely to provide vertical pathways for injection zone fluid in any case. The three penetrating wells were drilled before 1976 and no plugging records are available. Potential conduits across confining zones are highlighted in Table 4.

A column of 9 pound/gal drilling mud (fluid gradient of 0.4676 psi/ft) filling an abandoned borehole to within 50 feet of the surface would exert a higher pressure on the top of the injection interval than the injection zone fluid. The pressure in the injection zone would have to increase by approximately 253 psi (580 ft of head) for injection zone fluid to migrate up the borehole (ignoring the gel strength of the mud). After 30 years of injection, pressures greater than this would occur within about 1,800 ft of the well. This suggests that wells 37-20241 and 37-20731 would not allow injection zone fluid to leak upward even if they had not been properly abandoned but well 37-05213 might.

Table 4. Wells Penetrating the Confining Zone Within the Area of Review

API No.	Depth Interval	Casing or Perfs?	Cement or Open?	Formation
37-05213	7,128-7,375	uncased	?	Baxter Shale
	4,260-7,128	uncased	?	Blair
	3,960-4,260	uncased	?	Rock Springs
	3,430-3,960	uncased	?	Trail Member - Ericson
	3,160-3,430	uncased	?	Rusty zone - Ericson
	2,730-3,160	uncased	?	Canyon Creek Member - Ericson
	1,900-2,730	uncased	?	Almond
	1,350-1,900	uncased	?	Lewis Shale
	1,300-1,350	uncased	?	Fox Hills Sandstone
	314-1,300	uncased	?	Fort Union
0-314	blank	?	Fort Union	
37-20241	3,340-3,596	uncased	?	Rock Springs
	2,770-3,340	uncased	?	Trail Member - Ericson
	2,530-2,770	uncased	?	Rusty zone - Ericson
	2,180-2,530	uncased	?	Canyon Creek - Ericson
	1,280-2,180	uncased	?	Almond
	745-1,280	uncased	?	Lewis Shale
	233-745	uncased	?	Fort Union
0-233	blank	?	Fort Union	
37-20731	3,738-4,000	uncased	?	Chimney Rock
	2,927-3,738	uncased	?	Rock Springs
	2,390-2,927	uncased	?	Trail Member - Ericson
	2,160-2,390	uncased	?	Rusty zone - Ericson
	1,607-2,160	uncased	?	Canyon Creek - Ericson
	850-1,607	uncased	?	Almond
	384-850	uncased	?	Lewis Shale
	264-384	uncased	?	Fort Union
0-264	blank	?	Fort Union	

Shaded intervals indicate possible conduits through potential confining zones.

The injection rates during the historical injection period averaged about 2,861 bbl/day (84 gal/min) although maximum monthly injection reached 163,000 bbl (5,250 bbl/day or 153 gal/min). By the end of the historical injection period, the increase of pressure due to injection would have exceeded 253 psi within about 21,400 feet of the well. If wells 37-05213, 37-20241, or 37-20731 have not already failed and allowed fluid to escape the injection zone, then they will not likely fail during Legend Services' planned discharge of 12,000 bbl/month at a maximum instantaneous rate of 2 bbl/min (84 gal/min). Alternatively, estimates of the aquifer parameters for the Trail Member in PR Fed 15101-31i could be wrong.

The current uncertainty about the threat posed by abandoned oil wells will be considerably reduced once Legend Services completes the first annual pressure fall-off test for PR Fed 15101-31i. In addition, Legend Services will be required to find and photograph the locations for wells 37-05213 and 37-20241 and to visit 37-05213 annually to look for visible evidence of leakage from the injection zone at the surface. The photographs and pertinent field notes (time and date of visit, personnel, observations, etc.) will be included in the annual report.

A road to the site of 37-05213 was apparently constructed when the well was drilled or more recently when the adjacent coalbed methane test well, 37-25101, was drilled (Figure 2). Unless reclaimed, the road may still be passable.

The Office of State Lands and Investments did not express any concerns about Legend Services' proposed operations.

2. Maximum Surface Injection Pressure (Chapter 13. Section 5.b.vi, Section 18.b.ii):

The daily report for work done during the initial completion and stimulation of PR Fed 15101-31i, received by email on February 16, 2010, states that during acid stimulation on December 4, 2003, "formation broke at 1,450 psi at 3 bpm". Because pressure was measured at the surface, Mike Roberts calculated the formation fracture pressure at the top of the perforations at 3,402 feet with a fluid specific gravity of 1.0749 in another email on February 16, 2010. The result, 3,033 psi, yields a fracture gradient of 0.89 psi/ft, which is at the upper end of what is reasonable. The calculated gradient would be even higher if friction losses in the tubing were included.

Graphs of the step-rate test conducted on December 16, 2003, which were included in the application, indicate that the initial injection rate was 3.3 bpm (4,752 bbl/day, 139 gal/min). The graph does not show a linear pressure increase for the first few rate steps and the rate of pressure increase declined progressively above a rate of about 8 bpm (11,520 bbl/day, 336 gal/min) so the interpretation is ambiguous.

The data received so far indicates it would not be safe to operate PR Fed 15101-31i at an injection rate above 4,320 bbl/day (3 bpm) or above 1,450 psi but we don't yet know what rate or surface pressure would be below the formation fracture, or fracture-extension, pressure. Because Class I wells are prohibited from injection above the fracture pressure (Chapter 13. Section 9.d.ii), WDEQ took a very conservative approach in the calculation of maximum surface pressure in the December 28, 2009 letter. The fracture gradient of 0.50 psi/ft is at the low end of the reasonable range and was used in the online application by Legend Services. There is no allowance for friction loss in tubing. Fluid density of the injectate will probably change from one batch to the next, depending on sources, and injection rates could also change so friction loss would not be constant under operational conditions.

Legend Services may be able to inject at economical rates with a maximum injection pressure of 186 psi. If not, the best way for Legend Services to justify a higher maximum injection pressure would be to conduct a step-rate test. The initial rate steps would have to be at significantly less than 3 bbl/min to ensure a linear pressure increase for at least the first three rates. A down hole gauge placed within 20 feet of the top of the perforations in addition to a surface gauge will be required to improve the chances of accurately identifying a break over, given the uncertain smoothness of the previously used tubing. This will allow the direct measurement, along with the surface gauge, of actual friction losses under operating conditions. Although use of a surface gauge alone may be routine for oil and gas wells, it is not for Class I injection wells. Legend Services will be required to conduct a step-rate test within a year of permit issuance (Chapter 13. Section 9.d.ii) in any case so there are obvious advantages to doing it sooner rather than later.

3. Injectate Monitoring (Chapter 13, Section 5.b.xi.A, Section 13.g,h):

All injectate samples will be collected from the tubing valve at the wellhead, downstream of any additives. The analytes are listed in Table 2 (above). pH and specific conductance will be measured by a qualified individual at the well site at the time of sampling or, if that is not possible, at a lab within 3 hours of sample collection. Temperature will be measured on site in any case.

The following information will be collected for all samples:

- The date, exact place, and time of sampling or measurements;
- The name(s) of individual(s) who performed the sampling or measurements;
- The types of sample containers used, methods of preservation, and holding times before analysis at the lab;
- The date(s) analyses were performed;
- Names of individuals who performed the analyses;
- The analytical techniques or methods used;
- The results of such analyses.

4. Annual Pressure Fall-off Test (Chapter 13, Section 13.e):

Because PR Fed 15101-31i will be operated episodically, performing a valid pressure fall-off test will be a challenge. For a maximum injection rate of 2 bbl/min, the four-400 bbl storage tanks could sustain injection for 13 hours. If pre-test design indicates that 13 hours will not be sufficient to observe radial flow conditions, Legend Services will make arrangements to ensure the timely delivery of additional injection fluid during testing.

Because aquifer response is sensitive to injection history, Legend Services will schedule the fall-off test after 5 days of continuous injection or after 5 days of no injection. In the latter case, the length of the injection period before the test necessary to observe radial flow conditions during the fall-off period will be determined in the pre-test design. Alternatively, test analysis will explicitly account for the actual injection history prior to the test.

In conducting the annual pressure fall-off test, Legend Services will adhere to the guidelines in EPA Region 6's current "UIC Pressure Falloff Testing Guideline" with the following exceptions:

- Section 4.0 (3) – contact information for contractors who perform the test or the analysis must be included;
- Section 4.0 (7) – offset well information is not required as all the wells penetrating the receiver in the vicinity of PR Fed 15101-31i are plugged or shut-in;
- Section 4.0 (9) – electronic data can be uploaded to the GEM web site or submitted on CD-ROM but submission of a floppy disk will not be accepted;
- Section 5.0 (3) – bottom hole and surface pressure measurements are required; this fulfills the requirements of the following paragraph (4) too; and
- Section 8.0 – a No Migration Petition was not required for PR Fed 15101-31i but the results of the test should be compared to the parameter estimates used in the radius of influence calculation in the application and to the results of any previous pressure falloff tests.

5. 5-Year Mechanical Integrity Test (Chapter 13, Section 9.d.vii):

The application included a Well Integrity Report for the Wyoming Oil and Gas Conservation Commission which indicated that an annulus pressure test had been conducted in January 2008 at a pressure of 1,000 psi for 15 minutes. In the future, Part I mechanical integrity tests will be conducted at a surface pressure which is at least 100 psi greater than the historical maximum injection pressure and at a pressure at the packer at least 20 psi greater than the adjacent tubing pressure. The current historical maximum injection pressure for PR Fed 15101-31i is 915 psig. However, Legend Services will operate the well at a significantly lower pressure. Prior to the test, Legend Services will submit records of injection pressure to WDEQ to verify the surface annulus pressure to be used. Calculations of the annulus and tubing pressures at the packer require the specific gravities of the annulus and tubing fluids. These must be measured prior to the test. A successful test will require that the test pressure be held for 30 minutes with a pressure loss of less than 10%, rather than for 15 minutes as in the past.

In conducting the Part I mechanical integrity test, Legend Services will adhere to the guidelines in EPA's "Ground Water Section Guidance No. 39" with the following exceptions:

- The test pressure will be determined according to the paragraph above;
- Paragraphs 1 and 2 apply to the inspector not to the well operator;
- Paragraph 3 – because waste disposal at PR Fed 15101-31i is episodic, the well must be shut in for 24 hours prior to testing and remain shut in during the test;
- Paragraph 8 applies to the inspector not to the well operator; and
- The results need not be reported on the EPA form.

A radioactive tracer test of PR Fed 15101-31i, Part II of the mechanical integrity test, was conducted by Pomrenke Wireline Services in April 2009 and the log was included in the application. In the future, Parts I and II of the mechanical integrity test will be conducted at the same time. The next test will be scheduled for December 2012 to February 2013. Temperature logs will be run in addition to the radioactive tracer test unless WDEQ approves other methods suggested by Legend Services. Reports which accompany the results will include test details (tool depths, injection pressure, times of tracer release and observation, etc.) as well as interpretation by a qualified individual.

The general procedure for conducting a combined temperature and radioactive tracer survey is as follows:

- Shut the well in for 24 hours and install a crown valve for the logging tools;
- Run static temperature log from a depth of 2,800 feet (top of rusty zone) to the bottom of the well;
- Run gamma ray and casing collar locator logs from the bottom of the well up to 2,800 feet depth;
- Inject waste at maximum operational injection pressure;
- Adjust gamma ray log to avoid curve wrapping and run leak detection log by releasing tracer just below packer and successively lowering tool and logging up through downward migrating tracer slug multiple times or track the slug by lowering the tool below it and waiting for the arrival; if the slug splits, account for all the anomalies;
- Run velocity shots to generate an injection profile (for at least the first test);
- Run channel check (recommended);

- Run final gamma ray log with same sensitivity as baseline log to locate all exit points of tracer;
- Run a packer check for at least 15 minutes;
- Continue injection long enough to generate thermal anomalies in injection zone and then shut the well in for 12 hours (can be adjusted for later tests based on results of first test);
- Run static temperature log from 2,800 feet to the bottom of the well; and
- Thoroughly label all log traces.

6. Recordkeeping and Reporting (Chapter 13, Section 5.b.xi.B, Section 13.b, Section 15.):

Injection and annulus pressures will be monitored by chart recorders. Charts will be installed prior to the start of each injection operation and annotated with date and clock time and initial pressure gauge readings. At the end of each injection operation, the charts will be removed and annotated with pumping rate (range and average), total volume injected, and final pressure gauge readings.

As Legend Services anticipates maximum surface injection pressures of about 400 psig (assuming the formation doesn't fracture below this pressure), pressure gauges will be scaled in psi and have a range of 0-600 psig. Permit pressure limits will be rounded down to the smallest division of the gauge scale. Differences of 10 psi will be clearly distinguishable on the pressure charts. If Legend Services is allowed to operate PR Fed 15101-31i at above 600 psig, gauges and recorders will be changed accordingly.

7. Well Construction (Chapter 13, Section 5.b.xi.B, Section 11.a):

Legend Services explained that a nitrogen tank would be connected to the valve pictured on the annulus when an operator arrives on site to dispose of fluid. The annulus could be pressured up in a few minutes. The annulus pressure will be recorded during injection and prior to leaving the site, the operator will disconnect the hose from the annulus, collect the pressure chart, and secure the site.

8. Operator Training and Laboratory and Process Controls (Chapter 13, Section 9.d.vi):

In addition to the procedures listed in the February 28 reply by Legend Services, injection plant operators will also be trained on the requirements of the Class I injection well permit including how to identify a loss of mechanical well integrity and what must be reported to WDEQ within what periods of time. Operators will receive the complete training prior to first working at the injection well and will receive sufficient refresher training to ensure that they continue to operate the facility in a safe and effective manner. The following forms will be kept up to date and held available for WDEQ review in the Rock Springs office of Legend Services: "Monthly On-Site Equipment Inspection Record", "Record of Annual Discharge Prevention Briefings and Training", "Annual Facility Inspection Checklist" (all from Section J of the application), "Tank Battery Water Receiving Record", and "Downhole Injection Record" (delivered at the March 15 meeting).

Legend Services has identified the following commercial laboratories in Rock Springs: Wyoming Analytical Laboratory, Halliburton Services, Schlumberger Services, and Questar Energy Services – Applied Technology Services. As of October 2009, none of these laboratories was certified by EPA Region 8 for analysis of drinking water samples. Prior to the submission of samples to any of these labs for analysis, Legend Services will receive a statement from the lab certifying that the lab performs the relevant analyses in accordance with the guidelines in Part 136, Title 40 of the Code of Federal Regulations for the methods listed in Table 2 (above).

Sincerely,



George D. Langstaff
UIC Program, Water Quality Division

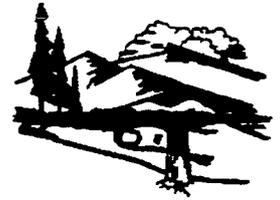
GDL/rm/10-0282

cc: Mike Roberts, Legend Services, Inc., P.O. Box 146, Rock Springs, WY 82902
Kevin Frederick, Ground Water Protection and UIC, WDEQ
WDEQ UIC file

Attachments: Certificate of Deposit Instructions
Letter of Credit Template
Reclamation Performance Bond Covering Closure, Post-Closure, Monitoring,
Plugging and Abandonment Activities Class I Non-Hazardous Injection Wells
EPA Region 6 "UIC Pressure Falloff Testing Guideline"
EPA "Ground Water Section Guidance No. 39"
Figure 1. Wells of Interest Within Area of Review for PR Fed 15101-31i
Figure 2. Penetrating Wells Within Area of Review for PR Fed 15101-31i



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

April 7, 2010

Wendy Cheung
USEPA, Region VIII
1595 Wynkoop Street
Denver, Colorado 80202-1129

RE: PR Fed 15101-31i, UIC Class I application 09-567
Sweetwater County, Wyoming

Dear Ms. Cheung:

In accordance with the Memorandum of Agreement between the Wyoming Department of Environmental Quality (WDEQ) and the United States Environmental Protection Agency (USEPA), the purpose of this letter is to inform USEPA that WDEQ has determined that the application from Legend Services, Inc., to construct and operate one Class I injection well to dispose of water produced incidental to oil and gas extraction is complete. The application material is available for USEPA review on the GEM web site (<https://gem.trihydro.com>). The proposed disposal well, PR Fed 15101-31i, has already been drilled and was operated by Warren Exploration and Production as a Class II disposal well from May 2004 to August 2006. The injected waste will consist of water recovered during the production of oil and gas from fields in southwestern Wyoming and northwestern Colorado. No other oilfield wastes will be included in the discharge. The produced water will be trucked to the disposal well.

Depth of Receiver: The receiver is the Trail Member of the Ericson Sandstone (part of the Upper Cretaceous Mesaverde Group), which lies at depths of 3,150-3,883 feet in the proposed disposal well. It is a massive, fine-grained to locally conglomeratic sandstone. PR Fed 15101-31i is currently perforated at depths of 3,416-3,432 feet, 3,452-3,465 feet, and 3,470-3,505 feet and the applicant has no plans to perforate additional zones.

Water Quality of Receiver: A December 2003 water sample was collected from PR Fed 15101-31i before the start of Class II injection and results were reported to the Wyoming Oil and Gas Conservation Commission (WOGCC). The sample had a total dissolved solids (TDS) concentration of 25,475 mg/L. However, the presence of 7,027 mg/L potassium in the sample and only 4,744 mg/L sodium suggests a significant contribution from potassium chloride "frac" fluid. Assuming all the potassium is due to contamination and subtracting equivalent moles of chloride, the non-contaminated TDS of the receiver sample could be as low as 12,000 mg/L. Mason and Miller (2005) reported analyses of five Ericson samples, from three springs and two wells 1,219 and 6,100 feet deep. The closest is a spring 12 miles west of PR Fed 15101-31i on the outcrop of the Ericson. TDS was not measured but specific conductances range from 515 to 1,500 μ S/cm, which are indicative of TDS less than 5,000 mg/L. Although Figure 25 in Mason

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---



and Miller (2005) suggests the "Mesaverde aquifer" could have less than 10,000 mg/L TDS at PR Fed 15101-31i, their designation includes the Lance Formation, which typically has much lower TDS concentrations than the Mesaverde Group.

The U.S. Geological Survey (USGS) produced waters database does not distinguish formations within the Mesaverde Group and consequently lumps the Almond, Ericson, Rock Springs, Blair, Pine Ridge, Allen Ridge, and Haystack Mountains formations. Moreover, the huge variance of Mesaverde results is problematic. In T16N, R101W, the next township north of that containing PR Fed15101-31i, seven Mesaverde water samples have TDS concentrations of 1,021, 6,018, 18,722, 26,398, 70,399, 75,729, and 107,184 mg/L. One sample from T15N, R100W, to the east, has 80,981 mg/L TDS. Four samples from T14N, R100W, have TDS concentrations of 10,173, 13,877, 16,444, and 44,111 mg/L. The WOGCC web site has an Ericson sample (API #493722482) from the Brady field at a depth of 3,188-4,525 feet with a TDS of 41,583 mg/L.

Mason and Miller (2005, p. 62) concluded that "Outcrop areas are the only places where fresh water can be found in the [Mesaverde] aquifer; away from these areas the water becomes very saline." Clarey and others (2009, p. 8-2) similarly concluded that "Groundwater quality constraints in most of the Wyoming GGRB [Greater Green River Basin] will generally limit new water well construction to depths of 1,000 feet or less into the Tertiary, Mesozoic, and Paleozoic aquifers. This means that groundwater development generally will be limited to aquifer outcrop areas, or near them, depending on structural dip." PR Fed 15101-31i is 5 and 7.5 miles down dip from the upper and lower contacts of the Ericson Sandstone and at least 3 miles east of the area prospective for Mesaverde water with TDS less than 1,000 mg/L shown on the map of Root and others (1973). Based on this evidence, WDEQ finds that the Trail Member is not an underground source of drinking water (USDW) as defined in Water Quality Rules and Regulations, Chapter 13, Section 2, and an aquifer exemption is not required.

Use of Receiver: The aquifer proposed for injection is not being used as a source of drinking water or for anything else. The proposed disposal well is in a sparsely populated part of the Washakie Basin about 32 miles southeast of Rock Springs (estimated 2007 population of 19,659). The nearest water wells (other than coalbed methane wells) are two domestic and stock-watering wells which produce from depths less than 400 feet in the Wasatch Formation about 4.5 miles south of PR Fed 15101-31i. The State Engineer's Office water well database does not indicate any other water wells (other than coalbed methane wells) within a radius of 11 miles.

Classification of Receiver: WDEQ proposes to classify water in the Trail Member of the Ericson Sandstone within 1,320 feet of PR Fed 15101-31i as Class VI because using water from the Ericson at this location would be economically and technologically impractical (Water Quality Rules and Regulations, Chapter 8, Section 4.d.ix.C). The deepest municipal well in the Greater Green River Basin, at Wamsutter, is 1,905 feet deep (Clarey, 2009). The only source of significant water demand in the vicinity of PR Fed 15101-31i is the town of Rock Springs, which gets its water supply by pipeline from the Green River 12 miles to the west. PR Fed 15101-31i is south of the checkerboard pattern of alternating sections of federal and private ownership which is a legacy of construction of the Union Pacific railroad. The federal land surrounding PR Fed 15101-31i is unlikely to ever be developed so water use in the area will continue to be limited to

widely spaced stock-watering wells and rare domestic wells for the few private inholdings. Domestic and stock-watering wells are almost invariably shallow and located close to the point of use. Consequently, it is highly unlikely that such wells would ever tap the Ericson within 3 miles of PR Fed 15101-31i. Core sage grouse habitat lies east, south, and west of PR Fed 15101-31i and will further constrain development and water use in the area.

In the absence of local demand for groundwater, only distant demand could make water development in the vicinity of PR Fed 15101-31i economical. In 2000, 10.5% of irrigation use, 82% of industrial use (possibly mostly related to oil and gas development), 0% of thermoelectric use, and 2.8% of public supply and domestic use in Sweetwater County were supplied by groundwater (Mason and Miller, 2005). Underground trona mines and open pit coal mines obtain 99% of their water from local aquifers. The nearest trona deposit is at least 30 miles west and the meager coal resources in T15N, R101W, do not contain any strippable resources (Root and others, 1973). Irrigation and thermoelectric use account for 70% of all water use in Sweetwater County but are close to irrigable land or power plants. Neither occur near PR Fed 15101-31i.

Municipal water development near PR Fed 15101-31i is also unlikely. Due to the surface water source of most public water supply, groundwater development would be relatively insensitive to even large increases in population. In 2000, it was estimated that municipal use of surface water within the Green River Basin was 6,500 acre-feet/year (4,030 gal/min) and that total surface water use was 611,700 acre-feet/year during a normal year (States West Water Resources Corporation, 2001, p. 7). Under the Colorado River Compact of 1922 and the Upper Colorado River Compact of 1948, Wyoming could use up to 833,000 acre-feet/year. Thus, municipal surface water use within the Wyoming part of the Green River drainage could increase several fold without exceeding 15% of Wyoming's remaining allocation. In 2010, the remaining compact allocation was estimated as 230,300-343,700 acre-feet/year under normal hydrologic conditions (Frantz, 2010, p.4). This amount could supply half the current population of Wyoming. Very speculative possibilities for distant water demand are oil shale development or underground coal gasification, which are water intensive (Clarey, 2009). There are oil shale deposits more than 6 miles east of PR Fed 15101-31i (Root and others, 1973) but the most likely water source would be the Wasatch Formation in the same location. Finally, the 2001 Green River Basin Water Plan focused on new surface water storage sites and did not even consider additional groundwater development as necessary or desirable within the 2030 planning horizon.

Even if water demand did increase in other parts of Sweetwater County, it is unlikely that the Ericson Sandstone near PR Fed 15101-31i would be targeted for groundwater development. The most prospective aquifers for groundwater development in Sweetwater County are the Wasatch and Fort Union Formations (Welder and McGreevy, 1966). The Fort Union occurs in the upper 1,100 feet of PR Fed 15101-31i. The Wasatch Formation outcrops east of PR Fed 15101-31i and dips east. Recharge of these aquifers near PR Fed 15101-31i is probably zero due to low precipitation and high potential evapotranspiration rates (Clarey, 2009). This makes the location unsuitable for sustainable groundwater development. If sandstones in the Ericson or the underlying Rock Springs formations were targeted, water quality would be better and drilling and pumping costs would be lower closer to the recharge areas several miles west of PR Fed 15101-31i, as indicated by Root and others (1973). Consequently, it is highly improbable that

use of Ericson water near PR Fed 15101-31i within the next several centuries would be economically feasible.

Confining Zone: The Trail Member of the Ericson Sandstone is confined above by the “rusty zone” of the Ericson. This unit consists of alternating shales and very fine grained sandstones deposited in a floodplain environment. It is over 200 feet thick in the vicinity of PR Fed 15101-31i.

Overlying Aquifers: The Canyon Creek Member of the Ericson Sandstone overlies the “rusty zone”. It is a sandstone similar to the Trail Member. A sample of Ericson water from API #049-03725533 ½ mile southwest of PR Fed 15101-31i has 13,605 mg/L TDS (Wyoming Oil and Gas Conservation Commission web site). As the well is only 2,262 feet deep, it probably terminates in the Canyon Creek Member.

The Ericson Sandstone is overlain by the Almond Formation, also a member of the Mesaverde Group. The Almond Formation consists of interbedded very fine-grained sandstone, siltstone, shale, and coal. In places, wells in the Almond could yield 20-100 gal/min (Welder and McGreevy, 1966). Six Almond water samples on the WOGCC web site from depths less than 3,200 feet in the Patrick Draw field have TDS concentrations of 33,258-56,035 mg/L. The Almond Formation is overlain by the Lewis Shale, which is a regional confining layer.

The Fort Union Formation lies on an erosional unconformity that excised the Lance and Fox Hills formations above the Lewis Shale. There are isolated sandstones that would probably yield water within the siltstones and shales of the Fort Union Formation. Shallow water supplies in the Fort Union Formation probably have TDS concentrations greater than 500 mg/L (Mason and Miller, 2005; Welder and McGreevy, 1966).

Underlying Aquifers: Aquifers beneath the Ericson Sandstone that could potentially be developed for drinking water supplies are the Rock Springs, Frontier, Muddy, Cloverly, Sundance, Nugget, Weber and Morgan (equivalent to the Tensleep), Madison, and Flathead. Results listed in the USGS's database (<http://energy.cr.usgs.gov/prov/prodwat/intro.htm>) for produced waters from fields closest to PR Fed 15101-31i are summarized in Table 1. For aquifers not listed in the table, data are sparse.

The Rock Springs Formation is composed of sandstone and coal with minor shale and was considered by Welder and McGreevy (1966) to have good yield possibilities. It is generally lumped with other Mesaverde units but a water sample labeled “Rock Springs” from a depth of 6,359-6,490 feet in section 36, T15N, R101W has a TDS concentration of 153,656 mg/L (USGS produced waters database, API#49009307). The Muddy Sandstone was lumped within the Baxter-Mowry confining unit by Mason and Miller (2005) and a sample (no API number listed) from a depth of 2,383 feet in the Baxter Basin field, up dip from PR Fed 15101-31i, has a TDS concentration of 10,309 mg/L. A Muddy water sample (API #490072016) from a depth of 8,516-8,556 feet in the Sugar Creek field on the opposite side of the Washakie Basin has 13,202 mg/L TDS.

There are no analyses for the Flathead Sandstone in or near the Rock Springs uplift but several samples have been collected from the Flathead in the Lost Soldier and Wertz fields in the extreme northeastern corner of Sweetwater County. Five samples in the USGS produced waters database have TDS concentrations ranging from 11,730 to 17,657 mg/L and a sixth has 3,932 mg/L. Since these samples were collected from much shallower depths, of 5,215-7,785 feet, than the Flathead under PR Fed 15101-31i and are also much closer to a recharge area, Flathead water below PR Fed 15101-31i would almost certainly have TDS concentrations greater than 10,000 mg/L. Based on these data, WDEQ has concluded that there are no underground sources of drinking water below the receiver in PR Fed 15101-31i.

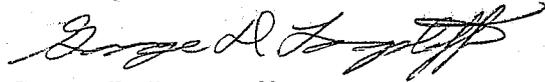
Table 1. Total Dissolved Solids Concentrations of Water Produced by Oil and Gas Wells from Aquifers Below the Ericson Sandstone

Aquifer	TDS Range (mg/L)	Depth Range (feet)	Up- or Downdip from PR Fed	Field Name	% with TDS > 10,000 mg/L
Frontier	17,300-58,800	1,749-2,874	up	M. Baxter Basin	100% (of 9)
	4,500-53,600	1,751-2,536	up	S. Baxter Basin	83% (of 6)
	65,400	4,369-4,511	up	Wildcat	100% (of 1)
	60,200	6,842-6,866	up	Golden Wall	100% (of 1)
	3,900	5,810-5,836	up	Salt Wells	0% (of 1)
Cloverly	13,500-33,600	2,370-2,614	up	M. Baxter Basin	100% (of 4)
	5,500-50,500	2,243-3,789	up	S. Baxter Basin	43% (of 14)
	11,500-68,300	3,859-4,420	up	Joyce Creek	100% (of 2)
	22,100-23,700	5,792-6,402	up	Salt Wells	100% (of 3)
Sundance	9,300-50,400	3,388-4,555	up	N. Baxter Basin	94% (of 17)
	9,500	3,120-3,235	up	M. Baxter Basin	0% (of 1)
	7,900-9,200	TD 3,822	up	S. Baxter Basin	0% (of 1)
	16,200	6,490-6,630	up	Chimney Rock	100% (of 1)
	12,600	6,995-7,023	up	Salt Wells	100% (of 1)
	Nugget	8,900-9,700	3,333-3,542	up	M. Baxter Basin
7,200-8,000		3,619-3,842	up	S. Baxter Basin	0% (of 2)
24,500-25,300		6,673-6,714	up	Chimney Rock	100% (of 1)
8,600		7,180-7,207	up	Salt Wells	0% (of 1)
92,900-95,300		11,636-11,780	same	Brady*	100% (of 4)
39,400		14,722-14,940	down	Kinney	100% (of 1)
20,500		13,790-14,253	down	Canyon Creek	100% (of 1)
50,800-61,100		14,422-14,465	down	Middle Mountain	100% (of 2)
Weber/ Tensleep	3,400-72,300	6,217-6,705	up	N. Baxter Basin	83% (of 6)
	8,200-33,400	5,339-5,535	up	M. Baxter Basin	67% (of 3)
	21,900-33,000	13,858-14,440	same	Brady	100% (of 2)
	86,900	13,602-13,840	same	Brady*	100% (of 1)
	101,700	12,800	same	Potter Mountain	100% (of 1)
Madison	76,800	15,840-16,097	same?	Teepee Mountain	100% (of 1)
	54,500	18,100-18,368	down	Table Rock*	100% (of 1)

*Data from Wyoming Oil and Gas Conservation Commission web site.

WDEQ anticipates completing a draft permit for PR Fed 15101-31i and releasing the draft for public comment by mid- to late April. Copies of the draft permit, public notice and a summary of any comments received will be forwarded to USEPA as they are developed. This finding of completeness is being communicated to USEPA prior to completion of the draft permit so that the end of USEPA's 45-day interim response period will nearly coincide with the end of the 30-day minimum public comment period. Please review the application and send your interim response to the return address above. Thank you.

Sincerely,



George D. Langstaff
UIC Program, Water Quality Division

GDL/rm/10-0283

cc: Orvie E. Berg, Legend Services Inc., P.O. Box 146, Rock Springs, WY 82902
Kevin Frederick, Ground Water Section Manager, WDEQ
WDEQ UIC file

References:

Clarey, K.E., Bartos, T., Copeland, D., Hallberg, L.L., Clark, M.L., and Thompson, M.L., 2009, Available groundwater determination, Technical Memorandum: WWDC Green River Basin Water Plan II - Groundwater Study Level I: Wyoming Water Development Commission, Technical Report, <http://waterplan.state.wy.us/plan/green/2010/finalrept/gw-finalrept.html>.

Frantz, M., 2010, Technical Memorandum: Green River Basin Plan II, Available surface water determination: Wyoming Water Development Commission, Basin Planning Program, http://waterplan.state.wy.us/plan/green/2010/techmemos/GRB_SWaterAvailability.pdf.

Mason, J.P. and Miller, K.A., 2005, Water resources of Sweetwater County, Wyoming: U.S. Geological Survey, Scientific Investigations Report 2004-5214, 188 p., 2 plates.

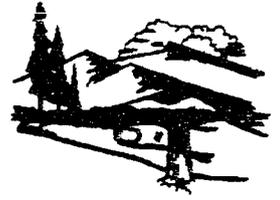
Root, F.K., Glass, G.B., and Lane, D.W., 1973, Sweetwater County, Wyoming, Geologic map atlas and summary of economic resources: Geological Survey of Wyoming, County Resource Series No. 2, 9 plates.

States West Water Resources Corporation, 2001, Executive summary, Green River Basin water plan: Wyoming Water Development Commission, Basin Planning Program, <http://waterplan.state.wy.us/plan/green/execsumm.pdf>.

Welder, G.E. and McGreevy, L.J., 1966, Ground-water reconnaissance of the Great Divide and Washakie Basins and some adjacent areas, southwestern Wyoming: U.S. Geological Survey, Hydrologic Investigations Atlas HA-219, 10 pages, 3 sheets.



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

April 12, 2010

Wendy Cheung
USEPA, Region VIII
1595 Wynkoop Street
Denver, Colorado 80202-1129

RE: PR Fed 15101-31i, UIC Class I application 09-567
Sweetwater County, Wyoming

Dear Ms. Cheung:

In my letter to you of April 7, 2010, I stated that there are only two water wells, other than coalbed methane wells, within a radius of 11 miles of PR Fed 15101-31i. That is incorrect. There is a miscellaneous use well, Forty-1, (State Engineer's Office permit number UW160791) with a reported depth of 75 feet 3.7 miles west of PR Fed 15101-31i. The water was used for drilling, dust suppression, and road construction. Although the permit has a condition stating it would be cancelled December 31, 2006 unless a written request for extension were received by that date, the State Engineer's Office (SEO) online database indicates the permit status is in good standing. I recently spoke with the current well owner, Mr. Alex Clark, and he has expressed concerns regarding the potential impacts of injection in PR Fed 15101-31i on his well.

There are two other industrial/miscellaneous use water wells, Forty-2 (UW162578) and Pine Mountain #1 (SEO Temporary Filing Number 40/8/248W) in state-owned section 36, T15N, R102W, 4,700-5,000 feet and 3,200-4,600 feet west of PR Fed 15101-31i, respectively. The application for Forty-2 requested a depth of 100 feet and Pine Mountain #1 well is also likely shallow. Forty-2 lists the same uses as Forty-1 and Mr. Michael Henn, Office of State Lands and Investments, said Pine Mountain #1 was probably used for drilling water as the permittee is an oilfield services company.

Given the uncertainty about the depth of Pine Mountain #1, my previous statement that water in the proposed injection zone for PR Fed 15101-31i is not being used should be qualified by the possibility that it might be, or might have been, used for oilfield operations. I apologize for any confusion my omission may have caused.

Sincerely,

George D. Langstaff
UIC Program, Water Quality Division

GDL/rm/10-0301

cc: Orvie E. Berg, Legend Services Inc., P.O. Box 146, Rock Springs, WY 82902
Kevin Frederick, Ground Water Section Manager, WDEQ
WDEQ UIC file

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---



UNDERGROUND INJECTION CONTROL PROGRAM
REVIEW QUESTIONS:

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION

Herschler Bldg., 4 West
Cheyenne, Wyoming 82002
307-777-7781

PROJECT: Class I Application 09-568
WDW No. 1, WDW No. 2, WDW No. 3, WDW No. 4, WDW No. 5

LOCATION: Sections 4 and 5, Township 13 North, Range 66 West
Laramie County

APPLICANT: Kevin D. Burke, Vice President/Refinery Manager
Frontier Refining, Inc.
300 Morrie Ave.
Cheyenne, WY 82007

OWNER: Frontier Refining, Inc.

CONSULTING GEOLOGIST: Jerry W. Taylor
Subsurface Technology, Inc.
8212 Kelwood Ave.
Baton Rouge, LA 70806

CONSULTING ENGINEER:

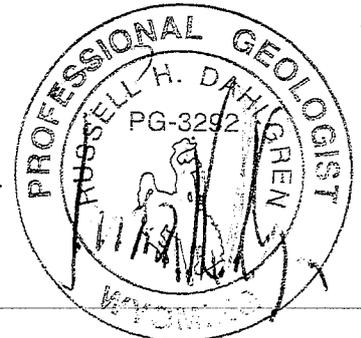
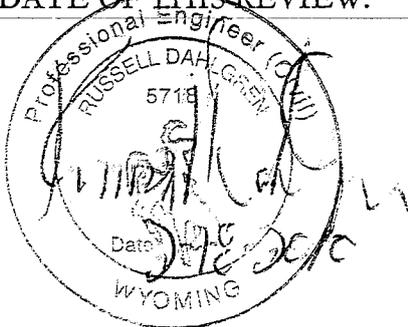
TITLE: "Class I Injection Well Permit Application for Five Non-hazardous Waste Injection Wells, Frontier Refining, Inc., 300 Morrie Avenue, Cheyenne, Wyoming 82007, Subsurface Project No. 60A6335"

DATE ON APPLICATION: October 2009

DATE RECEIVED BY WDEQ: October 12, 2009

WDEQ REVIEWER FOR THIS REVIEW: Bob Breuer
Russell Dahlgren, P.G.
George D. Langstaff

DATE OF THIS REVIEW: February 18, 2010



WDEQ Questions:

1. Hydrogeology of Lowest Underground Source of Drinking Water (Chapter 13, Section 5.b.vii, Section 12.a, b):

The application states that the lowest source of drinking water is the Tertiary White River Formation and that the Lance and Fox Hills Formations “are not considered viable sources of drinking water”. In fact, these formations have been explored for their water supply potential in southeastern Wyoming and some water wells produce entirely or partly from the Lance or Fox Hills. In the 1990s, the Cheyenne Board of Public Utilities drilled several test wells into the Lance Formation west of Cheyenne, including Conrey (State Engineers Office Permit No. UW94554 and UW104067), Holman (UW94547), and Koppes #3 (UW108831) and there has been more recent test drilling near the Winchester Hills subdivision south of Cheyenne. The Winchester #1 and #2 wells (UW46996 and UW68555), south of Cheyenne, and Laramie Community College’s LCCC #4 well (UW 158368) currently obtain some of their water from the Lance Formation. Other relatively deep wells near Cheyenne that probably tap the Lance are the Mark Woods #1 at 670 feet (UW157150), the Wade #1 at 720 feet (UW91329), and the Scalise #1 at 680 feet (UW101536). Silver Crown #1 (UW3310) and Silver Crown #3 (UW3312), west of Cheyenne, are completed in the Fox Hills or a lower Lance sandstone. The Town of Pine Bluffs currently has one Fox Hills well (UW178337) and is in the process of drilling a second Fox Hills well. The Fox Hills observation well (UW190151 and 34606) is open to the Lance and Fox Hills. These formations will become increasingly important sources of drinking water in the near future.

There is also the potential for underground sources of drinking water below the proposed receiving formation, the Hygiene Member of the Pierre Shale. An underground source of drinking water is defined as any aquifer, or portion thereof, with a total dissolved solids (TDS) concentration of 10,000 mg/L or less (definition in Water Quality Rules and Regulations, Chapter 13, Section 2.ff and water classes in Chapter 8, Section 4). Lowry, Crist, and Tilstra (1967) identified the Newcastle (stratigraphically equivalent to the Muddy Sandstone), Cloverly (equivalent to the Inyan Kara Group), Sundance, and Casper Formations as possible sources of water supply. They noted that a sample of water from the Cloverly Formation in the Horse Creek oil field, northwest of Cheyenne, contained 1,290 mg/L TDS. The Cheyenne Board of Public Utilities is currently exploring the Casper Formation on the east edge of the Laramie Mountains as a source of drinking water (States West and Lidstone, 2006) and this formation would underlie the refinery at a depth of approximately 13,000 feet (Blackstone, 1996).

- a) Because Class I wells are required to inject below the deepest USDW, please provide the evidence, analysis, and interpretation needed to determine whether or not aquifers beneath the Pierre Shale are USDWs. Estimate depths to the tops of these aquifers.
- b) Based on the analysis above, identify the aquifers available for Class I injection. Identify and describe the confining zone above the aquifer Frontier chooses to inject into and the lowermost USDW above that confining zone.

2. Mineral Resources (Chapter 13, Section 12.b.ii):

- a) Rate the conventional and non-conventional oil and gas potential for the Pierre Shale at the Frontier refinery.

3. Characterization of Waste Stream and Treatment of Waste (Chapter 13, Section 5.b.v and viii, Section 11.b and c.v, Section 18.d, e, f):

Information is lacking concerning the waste to be injected, the treatment of the waste and specific information concerning the surface facilities. The application states that the proposed wells will be used to dispose of refinery waste water (SIC Code 2911) but there are few details on the water quality or chemical composition of the waste stream. Applicants should realize information on the injected waste stream is basic and necessary to meet our joint responsibility to evaluate compatibility of the wastewater with receiver water/formation characteristics and injection well equipment. The schematic drawing in the application (Figure 8) is helpful but there is no map showing where the facilities other than wells will be physically located. Specific information concerning the surface facilities need to be provided.

Although most UIC applicants possess detailed information on their wastewater composition and flow rates, WDEQ realizes full details on each individual wastewater stream throughout the refinery may require more resources compared to alternate approaches which could accomplish the same objectives. WDEQ would consider the approach outlined below which, if properly and thoroughly presented by Frontier, could allow appropriate evaluation of those major wastewater streams which have a higher potential for incompatibility with the receiver aquifer or a higher potential for injection system scaling, plugging, fouling, or corrosion.

- a) Secondary treatment - Provide information on whether any refinery process wastewater streams routed to the injection well system will not receive secondary aggressive biological treatment (include descriptions and flow rates if applicable). Identify any "characteristic" or "listed" hazardous waste in the wastewater streams.
- b) Wastewater streams with higher mineral content - These should be evaluated for their contributions to scaling, plugging and/or incompatibility of the final injection stream with injection equipment or the receiver aquifer. Provide estimated operating ranges for flow rate and TDS for whichever of the following streams apply: water softener discharge, blowdown or backflush (resin, hot/cold lime, RO or other), boiler blowdown, cooling water blowdown, desalter effluent, salt tower discharge (pounds of salt/day) and any other wastewater stream with discharge of more than 5 gal/min and TDS exceeding 5,000 mg/L.
- c) Wastewater streams with higher levels of sulfur components - These should be evaluated for their contributions to the corrosion potential of the final injection stream. Provide estimated operating ranges for flow rate and sulfur concentrations for any of the following streams which apply (as sulfides, sulfates, sulfites or mercaptans): spent caustics and sour water streams not processed by a sour water stripper with discharge rates of more than 5 gal/min and total S exceeding 500 mg/L.
- d) Wastewater streams with higher levels of nutrients and iron - These should be evaluated for their contributions to the microbiological fouling or corrosion potential of the final injection stream. Provide estimated operating ranges for flow rate and levels of iron and nitrogen- or phosphorous-containing nutrients for any of the following streams which apply: nitrogen compounds such as spent amine, sour water, or other wastewater streams containing nitrogen (as ammonia, nitrate or amine) at total Kjeldahl nitrogen concentrations exceeding 50 mg/L; wastewater streams containing greater than 10 mg/L total iron or 5 mg/L total phosphorous, including, but not limited to, boiler blowdown and cooling water blowdown.
- e) Characterization of final wastewater injection stream - Provide the two most recent refinery effluent monitoring results with the most comprehensive parameter lists for Resource Conservation and Recovery Act (RCRA) regulations and Clean Water Act (CWA)

regulations. In addition, provide analytical results for pH, temperature, specific conductance, specific gravity, Barium, Calcium, Sodium, Magnesium, Potassium, Chloride, Sulfate, Fluoride, Nitrate, Iron, Manganese, Ammonia, Phosphate, Silica, TDS, TSS, and Oil & Grease (or TPH).

- f) Will a single pipe carry waste from the treatment plant through the filtration system and surge tank into an injection well or will there be other inputs into the injection stream between the treatment plant and the wells?
- g) How will the waste be partitioned between the wells? Will subsurface discharge be rotated from well to well according to some schedule or will discharge occur concurrently in all, or some subset, of wells?
- h) Has the waste been determined to be compatible with the proposed construction materials? If so, summarize the methods used and the results.

4. Monitoring Discharge (Chapter 13, Section 5.b.xi):

The Waste Analysis Plan in Appendix C of the application is incomplete.

- a) Please list the chemical analytes and physical parameters to be analyzed, the reasons they should be analyzed, and specify the EPA numbers for the methods that will be used.

5. Maps (Chapter 13, Section 5.b.viii):

The aerial photograph and map figures are helpful but more details on the proposed facilities are needed.

- a) On Figure 1 of the application, please show the Cheyenne City limits and the Crow Creek flood plain. Is all the property within the refinery border owned by Frontier Refining? If the wells or other surface facilities are within the flood plain, what precautions will be taken to avoid flood damage?
- b) Please provide a site map showing the wells, all the proposed pipelines, surface facilities, power and control facilities, locations of the treatment facilities, and operation and monitoring facilities for the proposed injection wells (see also 5a above).

6. Financial Responsibility (Chapter 13, Section 17):

The applicant states in Part I of the application that "appropriate documentation of financial surety to cover the projected well abandonment cost will be submitted upon WDEQ approval of this permit application (p. I-1)". The applicant is advised that WDEQ will not accept "self-bonding" as appropriate surety and that financial assurance must be provided before the permit will be issued.

- a) Will the applicant use a letter of credit, a certificate of deposit, or other financial instrument to provide financial assurance?
- b) To the estimate to plug and abandon an injection well, add costs for purging and removing or plugging pipelines and for removing any well houses or other surface facilities.

7. Effective Well Performance (Chapter 13, Section 9.d.vi):

- a) The application gives 500 gal/min as the total injected waste stream for all wells. Please provide the maximum expected instantaneous flow rate for each well. How many wells does Frontier Refining intend to operate simultaneously (see 5.h above)?
- b) Identify all well treating materials and the maximum volumes or concentrations to be used. Include Material Safety Data Sheets (MSDS) for each treatment mixture. Describe where the treatment materials will be added to the injection stream and whether they will be added continuously or periodically. How frequently will the injection wells be treated for

scaling, plugging/fouling, corrosion, microbe control, or any other problem in order to sustain well performance?

c) How will the waste stream be diverted or stored during well break downs or workovers?

8. Other questions and comments:

a) In the listing of existing permits in Table 1 of the application there is no mention of the wastewater treatment facilities. What, if any, permit does the existing wastewater treatment facility have?

b) Recent passage of Wyoming statute §34-1-152 and amending of Wyoming statute §34-1-202 provide for the ownership of pore space within the subsurface. Does Frontier Refining have rights to the pore space into which the wastes will be injected?

c) In addition to the stamp by a professional geologist, the application will also need to be stamped by a professional engineer licensed in Wyoming.

d) Please change the well names so that they can be easily distinguished from other injection wells in Wyoming and from other Frontier Refining wells. One possibility would be to append Frontier's stock symbol to the current names, for example FTOWDW No. 1.

References:

Blackstone, D.L., Jr., 1993, Precambrian basement map of Wyoming: Outcrop and structural configuration: Geological Survey of Wyoming, Map Series 43, 1 sheet.

Lowry, M.E., Crist, M.A., and Tilstra, J.R., 1967, Geology and ground-water resources of Laramie County, Wyoming: U.S. Geological Survey, Water-supply Paper 1834, 71 p., 2 plates.

States West Water Resources Corporation and Lidstone and Associates, Inc., 2006, Final report for the Belvoir Ranch Paleozoic ground water exploration project: Technical Report for the Board of Public Utilities and the Wyoming Water Development Commission.

End of Review

GDL/rm/10-0123



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

February 18, 2010

Kevin D. Burke
Frontier Refining, Inc.
300 Morrie Ave.
Cheyenne, WY 82007

RE: 09-568, Injection wells WDW No. 1, WDW No. 2, WDW No. 3, WDW No. 4, WDW No. 5
Class I underground injection control application, Laramie County

Dear Mr. Burke:

Frontier Refining's application for five new Class I wells at the Cheyenne refinery was received by the Wyoming Department of Environmental Quality (WDEQ) on October 12, 2009. According to Water Quality Rules and Regulations, Chapter 13, Section 6, WDEQ is required to draft a permit or determine that an application is incomplete within 60 days. Due to staffing constraints which prevented WDEQ from meeting that deadline, WDEQ contracted with Dahlgren Consulting, Inc., to review the application. Based on the review by Dahlgren Consulting and WDEQ's own examination of the application, WDEQ concludes that the application is incomplete and requests that additional information be provided. Please respond to the questions in the section below.

If you have any questions, please contact me at (307) 777-2960 or glangs@wyo.gov. Thank you for your patience.

Sincerely,

George D. Langstaff
UIC Program, Water Quality Division

GDL/rm/10-0123

cc: Jerry W. Taylor, Subsurface Technology, Inc., 8212 Kelwood Ave., Baton Rouge, La 70806
Russell Dahlgren, 914 East 23rd Street, Cheyenne, WY 82001
Kevin Frederick, Ground Water Section Manager, WDEQ
Bob Breuer, WDEQ
WDEQ UIC file

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

December 10, 2009

Laramie County Planning and Development Office
Attn: Abby Yenco, Senior Planner
310 West 19th, Suite 400
Cheyenne, Wyoming 82001

RE: Happy Jack Landfill Second Filing – Subdivision Review,
Action: Subdivision Review by DEQ → NOT REQUIRED
Location: Laramie County

Application No. 09-569

Dear Ms. Yenco:

The above referenced application was submitted for a Wyoming Department of Environmental Quality(DEQ) / Water Quality Division(WQD) Chapter 23 subdivision review. From the information provided about, and the description of the proposed subdivision, the WQD has determined that there are currently no existing potable water or sewer systems within the boundaries of the proposed subdivision, and that no domestic water and/or wastewater systems are proposed after the property is subdivided. According to Chapter 23, Section 4, of the Water Quality Rules and Regulations(WQR&R) the DEQ shall review proposed sewage systems and water supply systems “ - - - of the safety and adequacy of the proposed sewage and proposed water supply system”. Since there are no existing or proposed water or sewage systems involved with this subdivision, there is nothing for the DEQ/WQD to review or comment on. Therefore, there is nothing in this application for DEQ to make a recommendation on, so the DEQ Chapter 23 response is that a subdivision review by DEQ is not required.

If you should have any questions, please contact Ronald Ewald at either (307) 777-6183 or rewald@wyo.gov.

Sincerely,

Ronald L. Ewald
Consulting Engineer
Southeast District, Water Quality Division / Wyoming DEQ

RLE/rm/9-1090

cc: Laramie County Board of Commissioners, 300 West 19th Street, Cheyenne, WY 82001
City of Cheyenne, Public Works Department, Craig LaVoy, Public Works Engineer,
2101 O'Neil Avenue, Cheyenne, Wyoming 82001
Kelly W. Hafner, Benchmark Engineers, PC, 1920 Thomes Avenue, Suite 620, Cheyenne,
Wyoming 82001

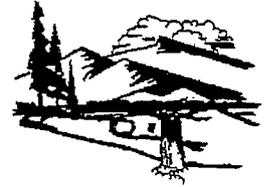
Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

NOTIFICATION OF COVERAGE

October 15, 2009

Ed Higbie
1143 Sheridan Ave
Cody, WY

RE: Blackburn Street Water Main. DEQ Permit #09-570, Park County; Tract 40, T53N, R101W

Dear Mr. Higbie,

This project consists of the installation of approximately 830 linear feet of 8-inch PVC waterline and one 6-inch fire service and hydrant. The project will extend the existing water main within Blackburn Street north of "E" Avenue.

The above application for coverage under General Permit has been reviewed in accordance with Chapter 3, Section 7, and Chapter 12, Section 14 of the Wyoming Water Quality Rules and Regulations and is hereby approved.

You are authorized to construct, the facility in accordance with the general permit and the materials submitted in your application package. Your attention is directed to the mandatory reporting requirements outlined in Part V, Section O of the general permit.

These General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage. The General Permits can be found under the Water Quality Division Water and Wastewater Program, Engineering and Technical Services at:

http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

If you have any questions, please contact Hannes Stueckler at 307-335-6964 or James Brough at 307-335-6961.

Sincerely,

Hannes E. Stueckler
Assistant Northwest District Engineer
Water Quality Division

James Brough, P.E.
Northwest District Engineer
Water Quality Division

xc: PDF to Cheyenne
James G. Evans P.E., Sage Civil Engineering, 2824 Big Horn Ave., Cody, WY 82414

Lander Field Office • 510 Meadowview Drive • Lander, WY 82520 • <http://deq.state.wy.us>

ABANDONED MINES
(307) 332-5085
FAX 332-7726

AIR QUALITY
(307) 332-6755
FAX 332-7726

LAND QUALITY
(307) 332-3047
FAX 332-7726

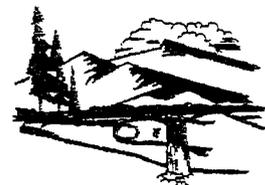
SOLID & HAZARDOUS WASTE
(307) 332-6924
FAX 332-7726

WATER QUALITY
(307) 332-3144
FAX 332-7726





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

NOTIFICATION OF COVERAGE

October 23, 2009

Tom Quick
301 17th St.
Cody, WY 82414

RE: Quick Duplexes Sewer. DEQ Permit #09-571, Park County, Tract 71-61 & 71-62, T 53N, R 101W,

Dear Mr. Quick,

This project consists of the construction of sewer main to a duplex housing structure. The duplex service will tie in to the main in a "wastewater access chamber". Although the maintenance of the service main is the responsibility of the owner, we requested that the City of Cody approve the use of the access chamber in the event that the responsibility for the sewer system should fall upon them in the unforeseeable future. The City of Cody has stated that their equipment can access the sewer system and has approved the access chamber design.

The above application for coverage under General Permit has been reviewed in accordance with Chapter 3, Section 7; and Chapter 11, Part B of the Wyoming Water Quality Rules and Regulations and is hereby approved.

You are authorized to construct, the facility in accordance with the general permit and the materials submitted in your application package. Your attention is directed to the mandatory reporting requirements outlined in Part V, Section O of the general permit.

These General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage. The General Permits can be found under the Water Quality Division Water and Wastewater Program, Engineering and Technical Services at:

http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

If you have any questions, please contact Hannes Stueckler at 307-335-6964 or James Brough at 307-335-6961.

Sincerely,

Hannes E. Stueckler
Assistant Northwest District Engineer
Water Quality Division

James Brough, P.E.
Northwest District Engineer
Water Quality Division

xc: PDF to Cheyenne
James G. Evans P.E., Sage Civil Engineering, 2824 Big Horn Ave., Cody, WY 82414

Lander Field Office • 510 Meadowview Drive • Lander, WY 82520 • <http://deq.state.wy.us>

ABANDONED MINES
(307) 332-5085
FAX 332-7726

AIR QUALITY
(307) 332-6755
FAX 332-7726

LAND QUALITY
(307) 332-3047
FAX 332-7726

SOLID & HAZARDOUS WASTE
(307) 332-6924
FAX 332-7726

WATER QUALITY
(307) 332-3144
FAX 332-7726



WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
PERMIT TO CONSTRUCT
PWS Number WY5600002

PERMIT NO. 09-572R

This permit hereby authorizes the applicant:

Town of Afton
James K. Sanderson
P.O. Box 310
Afton, WY 83110

to construct a public water system hydroelectric plant consisting of a penstock, powerhouse, 225 kW turbine and generator and electrical controls at the site of the Town of Afton's 1MG water storage tank in Swift Creek Canyon according to the procedures and conditions of the application number 09-572R. The facility is located about 1.25 miles east of the Town of Afton at NW 1/4 Section 28, T32N, R118W in the county of Lincoln, in the State of Wyoming. All construction, installation, or modification allowed by this permit shall be completed by November 19, 2011.

The issuance of this permit confirms that the Wyoming Department of Environmental Quality (DEQ) has evaluated the application submitted by the permittee and determined that it meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the engineer's design are the responsibility of the permittee, owner, and operator.

Granting this permit does not imply that DEQ guarantees or ensures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements. Compliance with discharge standards remains the responsibility of the permittee.

Nothing in this permit constitutes an endorsement by DEQ of the construction or the design of the facility described herein. This permit verifies only that the submitted application meets the design and construction standards imposed by Wyoming statutes, rules and regulations. The DEQ assumes no liability for, and does not in any way guarantee or warrant the performance or operation of the permitted facility. The permittee, owner and operator are solely responsible for any liability arising from the construction or operation of the permitted facility. By issuing this permit, the State of Wyoming does not waive its sovereign immunity.

The permittee shall allow authorized representatives from DEQ to enter and inspect any property, premise or place on or at which the facility is located or is being constructed or installed for the purpose of investigating actual or potential sources of water pollution, and for determining compliance or non-compliance with any rules, regulations, standards, permits or orders.

Nothing in this permit shall be construed to preclude the institution of any legal action or other proceeding to enforce any applicable provision of law or rules and regulations. It is the duty of the permittee, owner and operator to comply with all applicable federal, state and local laws or regulations in the exercise of its activities authorized by this permit.

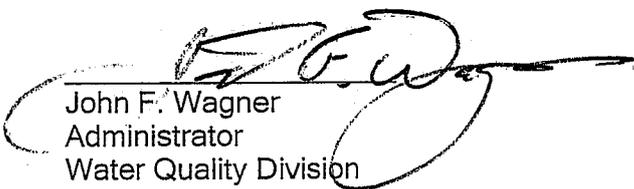
The issuance of this permit does not convey any property rights in either real or personal property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

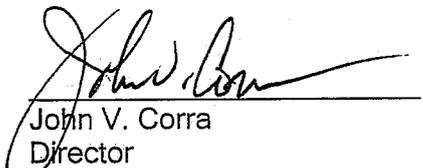
The permittee shall construct and operate the permitted facility in accordance with the statements, representations, procedures, terms and conditions of the permit application, supporting documents and permit. This permit does not relieve the permittee from any duty to obtain any other permit or authorization that may be required by any provision of federal, state or local laws.

In carrying out its activities authorized by this permit, the permittee, owner and operator shall comply with all of the following permit conditions:

- 1 of 4 The applicant will provide immediate oral or written notice to the Wyoming Department of Environmental Quality, Water Quality Division (WQD), Southwest District Engineer, 510 Meadow View Drive, Lander, WY 82520, 307-332-3144, FAX 307-332-3183, in accordance with the provisions of Section 11, Chapter 3, Wyoming Water Quality Rules and Regulations of any changes or modifications which are not consistent with the terms and conditions of this permit.
- 2 of 4 Within sixty days of completion of construction of the authorized facility, the applicant will submit to the Northwest District a certification of completion signed by the Engineer of Record or the owner. A form titled "Certificate of Completion" has been provided.
- a. Date that construction of the facility was completed; and
 - b. Date that the facility was placed in operation; and
 - c. Certification the facility was constructed in accordance with the terms and conditions of the permit; or
 - d. Certification the facility was completed with changes or modifications. Submittal of as-constructed plans and specifications for the system as it was constructed, certified by an engineer if appropriate is required. All modifications or deviations from the authorized plans must be highlighted.
- 3 of 4 When a turbine manufacturer has been chosen, plans and specifications of the turbine must be submitted for approval to the Southwest District Engineer before installation.
- 4 of 4 The review and approval of this permit is based upon the items identified in the attached "Statement of Basis".

AUTHORIZED BY:


John F. Wagner
Administrator
Water Quality Division


John V. Corra
Director
Department of Environmental Quality

11/23/19
Date of Issuance

MDB/rm/9-1033

STATEMENT OF BASIS

1. Permit Number: 09-572R
2. Application reviewed for compliance with the following regulations:
Chapters 3 and 12 of the Wyoming Water Quality Rules and Regulations.
3. Does the permit comply with all applicable regulations identified above?
Yes.
4. If a Section 17 of Chapter 3 review is required indicate the basis for determining groundwater will be protected.
Not Required.
5. Documentation of Statement of Basis: The archive file for this permit includes adequate documentation of all sections of this Statement of Basis.

CERTIFICATION

The issuance of this permit is based upon a review of the application package submitted in accordance with the requirements of Chapter 3, Section 6, Wyoming Water Quality Rules and Regulations. This review was performed by Mark D. Baron, P.E., mbaron@wyo.gov, Southwest District Engineer and completed on November 19, 2009. Permit issuance is recommended based upon statements, representations, and procedures presented in the permit application and supporting documents, permit conditions, and the items identified in this "Statement of Basis."

cc: Bent E. Crowther, P.E., Forsgren Associates, 350 North 2nd East, Rexburg, ID 83440
Kevin Frank, WDEQ/WQD, Casper

Martinez, Rebecca

From: Engels, Suzanne
Sent: Tuesday, October 27, 2009 8:42 AM
To: Martinez, Rebecca
Subject: Withdrawn Application

Rebecca-

The permit transfer request for permit # 09-573 was withdrawn over the phone today (10/27/09)

Thanks,
Suzanne

09-573

PERMIT TRANSFER REQUEST

Date: September 22, 2009

Water Quality Division
Department of Environmental Quality
1866 South Sheridan Avenue
Sheridan, WY 82801

To Whom It May Concern:

Cottonwood Point Subdivision intends to transfer ownership of the facility
(Original Owner)
associated with Permit Number 08-150 to City of Sheridan
(New Owner)
on 09/21/09. It is requested that the said permit be transferred to the new owner in
(Date)

accordance with section 12 of Chapter III, Wyoming Water Quality Rules and Regulations. The new owner agrees to accept and be bound by the provisions of the permit and any amendments, agrees to construct and operate the facility in accordance with the approved permit and agrees to accept responsibility for the facility's compliance with applicable standards and permit conditions, including the responsibility to perform any necessary corrective actions.

The original owner shall retain responsibility for the facility according to the terms of the original permit until the application for permit transfer is approved by the Administrator.

Please transfer the permit to the transferee's name and issue a modified permit reflecting the transfer of ownership. Terms and conditions of the original permit are transferred to and become the responsibility of the new owner.

Brett Sayer / President
Signature of Original Owner

Dave Kinskey
Signature of New Owner

Name BRETT SAYER / SSR Consultant

Name Dave Kinskey

Address 1288 Horn Meadows Dr.
Sheridan WY 82801

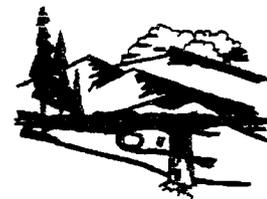
Address City of Sheridan
55 Grinnell Plaza
Sheridan, WY 82801

Telephone 307-672-6356

Telephone 307-674-6483



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

NOTIFICATION OF COVERAGE

October 19, 2009

Rod Seppala
78 Muldoon Road
Devils Tower, WY 82714

RE: Seppala Small Residential Wastewater System, Crook County
Location: SW NE ¼, S3, T52N, R64W; Permit # 09-574

Dear Mr. Seppala:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install, or modify the facility in accordance with general permit and the materials submitted in your application package. The General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage, http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

Additionally, the following permit conditions apply:

1. Cleanouts are required every 100 feet and at all changes in direction 22.5 degrees and greater, both horizontal and vertical. This requirement includes both the pipeline from the house to the septic tank and from the septic tank to the leachfield.
2. Either a 6-inch diameter clean-out riser or a manway from each compartment of the septic tank must be extended to the ground surface from all septic tanks.

Please be advised that Crook County inspects all small wastewater systems permitted through WDEQ. Please contact Crook County Growth and Development at 307.283.4548 to arrange an inspection of the system. **Septic systems shall not be installed during adverse weather. This includes rain, snow, severely cold temperatures, or excessively moist soils.** If you have any questions, please contact me at (307) 777-6941.

Sincerely,

Suzanne Engels
WDEQ/WQD

SE/rm/9-0914

cc: IPS, Cheyenne
WYDEQ Casper File
Tim Lyons, Crook County Growth and Development, P.O. Box 848, Sundance, WY 82729
Robert Olson, 1519 HWY 24, Hulett, WY 82720

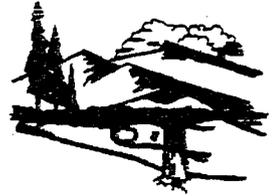
Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

CERTIFIED MAIL

January 15, 2010

Robert Taft
291 Dry Creek Road
Upton, WY 82730

**RE: Letter of Violation (LOV) and Return of Application No. 09-674
Construction of a Small Wastewater System without a Permit:
NWNE ¼, Section 29, T48N, R63W, Upton, WY, Weston County**

Dear Mr. Taft:

The Wyoming Department of Environmental Quality/Water Quality Division (DEQ) received an application to construct a small wastewater system (septic system) on December 7, 2009 located at the address listed above. DEQ sent a review of the plans and specifications on December 16, 2009 that outlined additional information required. Based on a phone conversation with you on December 18, 2009 it was determined that the septic system was installed in fall 2009 and you were unaware of the permitting requirements. Since this application is incomplete, all of the application materials are being returned, as DEQ is unable to process your application without the required information.

Further, the construction of a small wastewater system without a permit is a violation of Wyoming Statute 35-11-301 which states, in part:

- a) *No person, except when authorized by a permit issued pursuant to the provisions of this act, shall:*
 - (iii) *Construct, install, modify or operate any sewerage system, treatment works, disposal system or other facility, excluding uranium mill tailing facilities, capable of causing or contributing to pollution, except that no permit to operate shall be required for any publicly owned or controlled sewerage system, treatment works or disposal system;*

In addition, the design of the septic system does not meet the requirements outlined in the Wyoming Water Quality Rules and Regulations Chapter 11 Part D.



Therefore, a complete application must be submitted to DEQ by June 1, 2010 including:

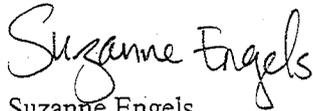
1. The percolation test must be repeated at the depth of the leachfield. According to information provided, the field was installed at 60 inches; the percolation test must be completed at 60 inches. Please submit the percolation test results.
2. With the new percolation data, the design must be verified for proper sizing. Please submit calculations used to size the system and if the leachfield is undersized, please describe what modifications will be made.
3. Address the items outlined in the DEQ review dated December 16, 2009.

The resubmitted application will be assigned a new DEQ tracking number and will be reviewed in accordance with Chapter 3 of the Wyoming Department of Environmental Quality/Water Quality Rules and Regulations.

Please be advised that this facility is in violation of the DEQ Water Quality Rules and Regulations. The DEQ wishes to bring this facility into compliance by conference, conciliation, and cooperation. Please be advised that a failure to voluntarily comply with all the provisions outlined above will result in substantial official enforcement actions by DEQ, which will include monetary penalties.

If you have any questions about how to comply with these provisions, please call me at (307) 777-6941.

Sincerely,



Suzanne Engels
WDEQ/WQD

SE/rm/10-0048

cc: IPS, Cheyenne
WDEQ Casper File
Weston County Growth & Development Office, 1 W. Main Street, Newcastle, WY 82701

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
PERMIT TO CONSTRUCT

PERMIT NO. 09-575R

Town of Alpine Sewer Collection System Expansion Project - Phase II

This permit hereby authorizes the applicant:

Town of Alpine
Victoria DeCora
P.O. Box 3070
Alpine, WY 83128

to construct a sewage collection system consisting of about 8975 linear feet (LF) of 8-inch PVC gravity sewer main and 2122 LF of 4-inch PVC sewer force main along with a sewage lift station to serve 92 lots according to the procedures and conditions of the application number 09-575R. The facility is located in the Town of Alpine in Sections 28 & 29, T37N, R119W in the county of Lincoln, in the State of Wyoming. All construction, installation, or modification allowed by this permit shall be completed by October 26, 2011.

The issuance of this permit confirms that the Wyoming Department of Environmental Quality (DEQ) has evaluated the application submitted by the permittee and determined that it meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the engineer's design are the responsibility of the permittee, owner, and operator.

Granting this permit does not imply that DEQ guarantees or ensures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements. Compliance with discharge standards remains the responsibility of the permittee.

Nothing in this permit constitutes an endorsement by DEQ of the construction or the design of the facility described herein. This permit verifies only that the submitted application meets the design and construction standards imposed by Wyoming statutes, rules and regulations. The DEQ assumes no liability for, and does not in any way guarantee or warrant the performance or operation of the permitted facility. The permittee, owner and operator are solely responsible for any liability arising from the construction or operation of the permitted facility. By issuing this permit, the State of Wyoming does not waive its sovereign immunity.

The permittee shall allow authorized representatives from DEQ to enter and inspect any property, premise or place on or at which the facility is located or is being constructed or installed for the purpose of investigating actual or potential sources of water pollution, and for determining compliance or non-compliance with any rules, regulations, standards, permits or orders.

Nothing in this permit shall be construed to preclude the institution of any legal action or other proceeding to enforce any applicable provision of law or rules and regulations. It is the duty of the permittee, owner and operator to comply with all applicable federal, state and local laws or regulations in the exercise of its activities authorized by this permit.

The issuance of this permit does not convey any property rights in either real or personal property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

The permittee shall construct and operate the permitted facility in accordance with the statements, representations, procedures, terms and conditions of the permit application, supporting documents and permit. This permit does not relieve the permittee from any duty to obtain any other permit or authorization that may be required by any provision of federal, state or local laws.

In carrying out its activities authorized by this permit, the permittee, owner and operator shall comply with all of the following permit conditions:

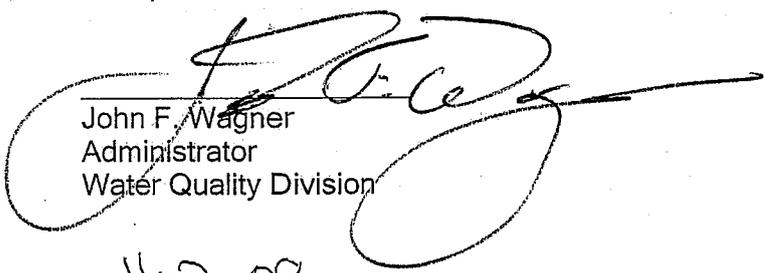
1 of 3 The applicant will provide immediate oral or written notice to the Wyoming Department of Environmental Quality, Water Quality Division (WQD), Southwest District Engineer, 510 Meadow View Drive, Lander, WY 82520, 307-332-3144, FAX 307-332-3183, in accordance with the provisions of Section 11, Chapter 3, Wyoming Water Quality Rules and Regulations of any changes or modifications which are not consistent with the terms and conditions of this permit.

2 of 3 Within sixty days of completion of construction of the authorized facility, the applicant will submit to the Northwest District a certification of completion signed by the Engineer of Record or the owner. A form titled "Certificate of Completion" has been provided.

- a. Date that construction of the facility was completed; and
- b. Date that the facility was placed in operation; and
- c. Certification the facility was constructed in accordance with the terms and conditions of the permit; or
- d. Certification the facility was completed with changes or modifications. Submittal of as-constructed plans and specifications for the system as it was constructed, certified by an engineer if appropriate is required. All modifications or deviations from the authorized plans must be highlighted.

3 of 3 The review and approval of this permit is based upon the items identified in the attached "Statement of Basis".

AUTHORIZED BY:


John F. Wagner
Administrator
Water Quality Division


John V. Corra
Director
Department of Environmental Quality

11-2-09
Date of Issuance

MDB/rm/9-0979

STATEMENT OF BASIS

1. Permit Number: 09-575R
2. Application reviewed for compliance with the following regulations:
Chapters 3, and 11 of the Wyoming Water Quality Rules and Regulations.
3. Does the permit comply with all applicable regulations identified above?
Yes.
4. If a Section 17 of Chapter 3 review is required indicate the basis for determining groundwater will be protected.
Not Required.
5. Documentation of Statement of Basis: The archive file for this permit includes adequate documentation of all sections of this Statement of Basis.

CERTIFICATION

The issuance of this permit is based upon a review of the application package submitted in accordance with the requirements of Chapter 3, Section 6, Wyoming Water Quality Rules and Regulations. This review was performed by Mark D. Baron, P.E., mbaron@state.wy.us, Southwest District Engineer and completed on October 26, 2009. Permit issuance is recommended based upon statements, representations, and procedures presented in the permit application and supporting documents, permit conditions, and the items identified in this "Statement of Basis."

cc: Ryan J. Erickson, Sunrise Engineering, Inc., P.O. Box 609, Afton, WY 83110
Kevin Frank, WDEQ/WQD, Casper



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

NOTIFICATION OF COVERAGE

October 26, 2009

Lonesome Fox Corp.
Attn: Gill White, Owner
1576 Wyo. Hwy 13
Rock River, Wyoming 82083

RE: Lonesome Fox Corp., New Septic System,
Location: SW¼, Section 17, T19N, R78W,

Application No. **09-576**
Carbon County

Dear Mr. White:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility for an **office/shop building with up to 5 workers** in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install or modify the small wastewater system in accordance with Chapter 11, Part D of the Water Quality Division Rules and Regulations, the general permit, the condition listed below, and the materials submitted in your application package. Your attention is directed to the mandatory reporting requirements outlined in Part V, Section O of the general permit. Additionally, the following project specific condition also applies:

Septic Tank Clean-Out Riser Requirement - Either a 6 inch diameter clean-out riser or the manway from **each compartment of the septic tank** must be extended to the ground surface.

The approval granted under this Notification Of Coverage and the General Permit shall expire on October 26, 2011. Please reference Application Number **09-576** in any future correspondence.

If you have any questions, please contact me at (307) 777-6183.

Sincerely,

Ronald L. Ewald
Consulting Engineer
Southeast District, Water Quality Division

RLE/rm/9-0960

Enclosures: GENERAL PERMIT - Small Wastewater Facility
Certificate of Completion

cc: IPS, Cheyenne
Kristy Rowan, Carbon County Planning Office, Carbon Building, 215 West
Buffalo Street, Suite 336, Rawlins, Wyoming 82301
Hy Altitude Contracting, P.O. Box 21, Centennial, Wyoming 82055

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

NOTIFICATION OF COVERAGE

October 27, 2009

City of Laramie
Paul Beckett, Utility Division Manager (Interim)
P.O. Box C
Laramie, WY 82073

RE: Bid Schedule No. 2 – Laramie Water line Rehabilitation Project,
Application No. **09-577**, Albany County

Dear Mr. Beckett:

The above application for coverage under General Permit to Construct, Install, Modify or Operate Extensions to or Modifications of Existing Public Water Supply Distribution Systems and or Existing Sewage Collection Systems described as replacement of approximately 2040 ft of existing water line with approximately 1040 ft 8 inch PVC water line and approximately 1000 ft 12 inch PVC water line, and replace eight fire hydrants, Section 4, Section 27, and Section 34, T16N R 73W; Albany County, in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install or modify the water distribution system in accordance with Chapter 12, Section 14 of the Water Quality Division Rules and Regulations, the general permit and the materials submitted in your application package. All construction, installation, or modification allowed by this notification of coverage shall be completed by October 27, 2011.

This **Notice of Coverage** is covered under the General Permits on the Wyoming Department of Environmental Quality webpage. The General Permits can be viewed at the following path: http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp. Please reference Application No. **09-577** in any future correspondence.

If you have any questions, please contact me at 307-777-7075.

Sincerely,

Richard R. Cripe PE
Southeast District Engineer
Water Quality Division

RRC/rm/9-0970

Enclosure: Certificate of Completion

cc: IPS, Cheyenne
Roger Strube, Aspen-Banner Engineering, P.O. Box 550, Laramie, WY 82073

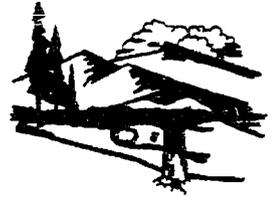
Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

NOTIFICATION OF COVERAGE

October 27, 2009

City of Laramie
Paul Beckett, Utility Division Manager (Interim)
P.O. Box C
Laramie, WY 82073

RE: Bid Schedule No. 1 – Laramie Water line Rehabilitation Project,
Application No. **09-578**, Albany County

Dear Mr. Beckett:

The above application for coverage under General Permit to Construct, Install, Modify or Operate Extensions to or Modifications of Existing Public Water Supply Distribution Systems and or Existing Sewage Collection Systems described as replacement of approximately 3010 ft of existing water line with 8 inch C900 DR14 PVC water line, replace three fire hydrants, and install one new fire hydrants, SW ¼ Section 31, T16N R 73W; Albany County, in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install or modify the water distribution system in accordance with Chapter 12, Section 14 of the Water Quality Division Rules and Regulations, the general permit and the materials submitted in your application package. All construction, installation, or modification allowed by this notification of coverage shall be completed by October 27, 2011.

This **Notice of Coverage** is covered under the General Permits on the Wyoming Department of Environmental Quality webpage. The General Permits can be viewed at the following path: http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp. Please reference Application No. **09-578** in any future correspondence.

If you have any questions, please contact me at 307-777-7075.

Sincerely,

Richard R. Cripe PE
Southeast District Engineer
Water Quality Division

RRC/rm/9-0971

Enclosure: Certificate of Completion

cc: IPS, Cheyenne
John Galbreath, Coffey Engineers & Surveying, 903 E. Grand Ave., Laramie, WY 82070

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

NOTIFICATION OF COVERAGE

November 5, 2009

City of Laramie
Paul Beckett, Utility Division Manager (Interim)
P.O. Box C
Laramie, WY 82073

RE: Bid Schedule No. 3 – Laramie Water line Rehabilitation Project,
Application No. **09-579**, Albany County

Dear Mr. Beckett:

The above application for coverage under General Permit to Construct, Install, Modify or Operate Extensions to or Modifications of Existing Public Water Supply Distribution Systems and or Existing Sewage Collection Systems described as replacement of approximately 2600 ft of existing water line with 8 inch PVC water line, and install four new fire hydrants, NE ¼ Section 33, NE ¼ SW ¼ Section 28, T16N R 73W; Albany County, in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install or modify the water distribution system in accordance with Chapter 12, Section 14 of the Water Quality Division Rules and Regulations, the general permit and the materials submitted in your application package. All construction, installation, or modification allowed by this notification of coverage shall be completed by November 27, 2011.

This **Notice of Coverage** is covered under the General Permits on the Wyoming Department of Environmental Quality webpage. The General Permits can be viewed at the following path: http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp. Please reference Application No. **09-579** in any future correspondence.

If you have any questions, please contact me at 307-777-7075.

Sincerely,

Richard R. Cripe PE
Southeast District Engineer
Water Quality Division

RRC/rm/9-1011

Enclosure: Certificate of Completion

cc: IPS, Cheyenne
Lynn Hill, DOWL HKM, 16 W. 8th Street, Sheridan, WY 82801

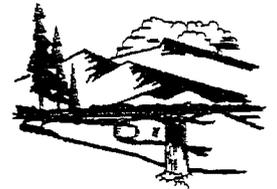
Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

NOTIFICATION OF COVERAGE

October 26, 2009

Rodney Wambeke, Mayor
P.O. Box 207
Deaver, WY
82421

RE: Town of Deaver, Sewer system replacement. DEQ Permit #09-580R, Big Horn County, Section 29, T57N, R97W

Dear Mayor Wambeke,

This project consists of the replacement of all of the collection lines and manholes in the town of Deaver. Service connections will be re-attached

The above application for coverage under General Permit has been reviewed in accordance with Chapter 3, Section 7; and Chapter 11, Part B of the Wyoming Water Quality Rules and Regulations and is hereby approved.

You are authorized to construct, the facility in accordance with the general permit and the materials submitted in your application package. Your attention is directed to the mandatory reporting requirements outlined in Part V, Section O of the general permit.

These General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage. The General Permits can be found under the Water Quality Division Water and Wastewater Program, Engineering and Technical Services at:

http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

If you have any questions, please contact Hannes Stueckler at 307-335-6964 or James Brough at 307-335-6961.

Sincerely,

Hannes E. Stueckler
Assistant Northwest District Engineer
Water Quality Division

James Brough, P.E.
Northwest District Engineer
Water Quality Division

xc: PDF to Cheyenne
PDF to Kevin Frank, DEQ
William Bridges P.E., Pryor Mountain Engineering, P.O. Box 671, Cowley, WY 82420

Lander Field Office • 510 Meadowview Drive • Lander, WY 82520 • <http://deq.state.wy.us>

ABANDONED MINES
(307) 332-5085
FAX 332-7726

AIR QUALITY
(307) 332-6755
FAX 332-7726

LAND QUALITY
(307) 332-3047
FAX 332-7726

SOLID & HAZARDOUS WASTE
(307) 332-6924
FAX 332-7726

WATER QUALITY
(307) 332-3144
FAX 332-7726



WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
PERMIT TO CONSTRUCT

PERMIT NO. 09-581

Reliance Wastewater Land Application

This permit hereby authorizes the applicant:

Charles A. Johnson, Board Chairman
Reliance Sewer District
P.O.Box 205
Reliance, WY 82943

to land apply wastewater from the Reliance Sewer District's facultative lagoon system according to the procedures and conditions of the application number 09-581. The facility is located in Reliance at SW1/4 of Section 21 and NW1/4 of Section 28, T12N, R109 in the county of Sweetwater, in the State of Wyoming. All construction, installation, or modification allowed by this permit shall be completed by October 29, 2011.

The issuance of this permit confirms that the Wyoming Department of Environmental Quality (DEQ) has evaluated the application submitted by the permittee and determined that it meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the engineer's design are the responsibility of the permittee, owner, and operator.

Granting this permit does not imply that DEQ guarantees or ensures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements. Compliance with discharge standards remains the responsibility of the permittee.

Nothing in this permit constitutes an endorsement by DEQ of the construction or the design of the facility described herein. This permit verifies only that the submitted application meets the design and construction standards imposed by Wyoming statutes, rules and regulations. The DEQ assumes no liability for, and does not in any way guarantee or warrant the performance or operation of the permitted facility. The permittee, owner and operator are solely responsible for any liability arising from the construction or operation of the permitted facility. By issuing this permit, the State of Wyoming does not waive its sovereign immunity.

The permittee shall allow authorized representatives from DEQ to enter and inspect any property, premise or place on or at which the facility is located or is being constructed or installed for the purpose of investigating actual or potential sources of water pollution, and for determining compliance or non-compliance with any rules, regulations, standards, permits or orders.

Nothing in this permit shall be construed to preclude the institution of any legal action or other proceeding to enforce any applicable provision of law or rules and regulations. It is the duty of the permittee, owner and operator to comply with all applicable federal, state and local laws or regulations in the exercise of its activities authorized by this permit.

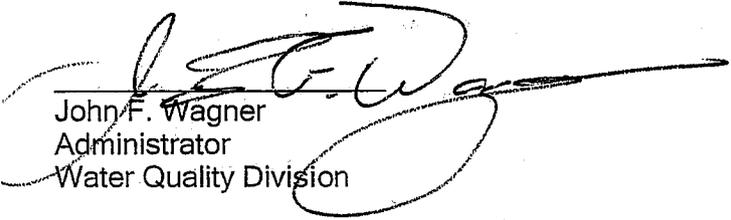
The issuance of this permit does not convey any property rights in either real or personal property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

The permittee shall construct and operate the permitted facility in accordance with the statements, representations, procedures, terms and conditions of the permit application, supporting documents and permit. This permit does not relieve the permittee from any duty to obtain any other permit or authorization that may be required by any provision of federal, state or local laws.

In carrying out its activities authorized by this permit, the permittee, owner and operator shall comply with all of the following permit conditions:

- 1 of 3 The applicant will provide immediate oral or written notice to the Wyoming Department of Environmental Quality, Water Quality Division (WQD), Southwest District Engineer, 510 Meadow View Drive, Lander, WY 82520, 307-332-3144, FAX 307-332-3183, in accordance with the provisions of Section 11, Chapter 3, Wyoming Water Quality Rules and Regulations of any changes or modifications which are not consistent with the terms and conditions of this permit.
- 2 of 3 No sewage effluent is to leave the fenced area at the Reliance lagoon site.
- 3 of 4 The land application of domestic septage may not occur between November 1 and April 1, or any other time when frozen or saturated ground conditions exist.
- 4 of 5 Within sixty days of completion of construction of the authorized facility, the applicant will submit to the Northwest District a certification of completion signed by the Engineer of Record or the owner. A form titled "Certificate of Completion" has been provided.
- a. Date that construction of the facility was completed; and
 - b. Date that the facility was placed in operation; and
 - c. Certification the facility was constructed in accordance with the terms and conditions of the permit; or
 - d. Certification the facility was completed with changes or modifications. Submittal of as-constructed plans and specifications for the system as it was constructed, certified by an engineer if appropriate is required. All modifications or deviations from the authorized plans must be highlighted.
- 5 of 5 Review and approval of this permit is based upon the items identified in the attached "Statement of Basis".

AUTHORIZED BY:


John F. Wagner
Administrator
Water Quality Division


John V. Corra
Director
Department of Environmental Quality

11-2-09
Date of Issuance

PDR/rm/9-0986

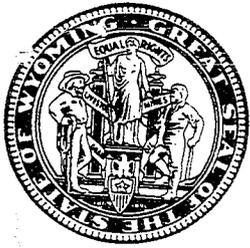
STATEMENT OF BASIS

1. Permit Number: 09-581
2. Application reviewed for compliance with the following regulations:
Chapters 3, and 11 of the Wyoming Water Quality Rules and Regulations.
3. Does the permit comply with all applicable regulations identified above?
No. A variance from the Chapter 11 Section 53 wastewater land application requirement for a 100 foot buffer zone is granted because retention within the security fence provides required public health protection.
4. If a Section 17 of Chapter 3 review is required indicate the basis for determining groundwater will be protected.
The depth to groundwater exceeds 4 feet and the required buffer distance to water wells exceeds 100 feet.
5. Documentation of Statement of Basis: The archive file for this permit includes adequate documentation of all sections of this Statement of Basis.

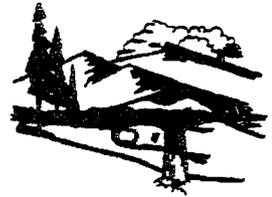
CERTIFICATION

The issuance of this permit is based upon a review of the application package submitted in accordance with the requirements of Chapter 3, Section 6, Wyoming Water Quality Rules and Regulations. This review was performed by Perry Roberson and approved by Mark D. Baron, P.E., mbaron@wyo.gov, Southwest District Engineer and completed on October 29, 2009. Permit issuance is recommended based upon statements, representations, and procedures presented in the permit application and supporting documents, permit conditions, and the items identified in this "Statement of Basis."

cc: Randy J. Hansen, JFC Engineers & Surveyors, 1515 Ninth Street, Suite A, Rock Springs, WY 82901
Kathie Mulkey, WDEQ/WQD, 2451 Foothills Blvd, Suite 100, Rock Springs, WY 82901



Department of Environmental Quality



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

Steve Freudenthal, Governor

John Corra, Director

NOTIFICATION OF COVERAGE

October 23, 2009

Les Barkhurst
HC 63 Box 14
Saratoga, WY 82331

RE: Ride on Faith Ministries Church – Septic System,
Location: SE¼, NE¼, Section 8, T16N, R83W,

Application No. **09-582**
Carbon County

Dear Mr. Barkhurst:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility for a **30 member church** in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install or modify the small wastewater system in accordance with Chapter 11, Part D of the Water Quality Division Rules and Regulations, the general permit, the conditions listed below, and the materials submitted in your application package. Your attention is directed to the mandatory reporting requirements outlined in Part V, Section O of the general permit. Additionally, the following project specific conditions also apply:

1. Septic Tank Clean-Out Riser Requirement - Either a 6 inch diameter clean-out riser or the manway from **each compartment of the septic tank** must be extended to the ground surface.
2. Polyethylene Septic Tank Installation Requirements - To ensure structural integrity, the **manufacturer's instructions** regarding bedding the tank and filling the tank with water during burial **must be followed during installation**. Additionally, immediately after clean-outs, the tank must be refilled with water according to the manufacturer's instructions to maintain structural integrity.

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

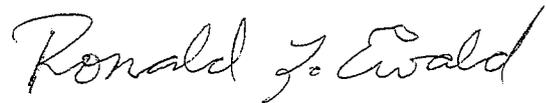
ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---



The approval granted under this Notification Of Coverage and the General Permit shall expire on October 23, 2011. Please reference Application Number 09-582 in any future correspondence.

If you have any questions, please contact me at (307) 777-6183.

Sincerely,

A handwritten signature in cursive script that reads "Ronald L. Ewald".

Ronald L. Ewald
Consulting Engineer
Southeast District, Water Quality Division

RLE/rm/9-0949

Enclosures: GENERAL PERMIT - Small Wastewater Facility
Certificate of Completion

cc: IPS, Cheyenne
Kristy Rowan, Carbon County Planning Office, Carbon Building, 215 West
Buffalo Street, Suite 336, Rawlins, Wyoming 82301



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

NOTIFICATION OF COVERAGE

October 20, 2009

Nehal Bokhari
78 Muldoon Road
Devils Tower, WY 82714

RE: Bokhari Small Residential Wastewater System, Crook County
Location: E NE ¼, S6, T52N, R64W; Permit # 09-583

Dear Mr. Bokhari:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install, or modify the facility in accordance with general permit and the materials submitted in your application package. The General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage,

http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

Additionally, the following permit conditions apply:

1. Cleanouts are required every 100 feet and at all changes in direction 22.5 degrees and greater, both horizontal and vertical. This requirement includes both the pipeline from the house to the septic tank and from the septic tank to the leachfield.
2. Either a 6-inch diameter clean-out riser or a manway from each compartment of the septic tank must be extended to the ground surface from all septic tanks.

Please be advised that Crook County inspects all small wastewater systems permitted through WDEQ. Please contact Crook County Growth and Development at 307.283.4548 to arrange an inspection of the system. **Septic systems shall not be installed during adverse weather. This includes rain, snow, severely cold temperatures, or excessively moist soils.** If you have any questions, please contact me at (307) 777-6941.

Sincerely,

Suzanne Engels
WDEQ/WQD

SE/rm/9-0922

cc: IPS, Cheyenne
WYDEQ Casper File
Tim Lyons, Crook County Growth and Development, P.O. Box 848, Sundance, WY 82729
Travis Dewey, Tri-City Excavating, Inc., 169 Thorn Divide Rd, Carlile, WY 82721

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

NOTIFICATION OF COVERAGE

October 23, 2009

Karen Stacy
13999 Bismarck Branch Road
Vale, SD 57788

RE: Stacy Small Residential Wastewater System, Crook County
Location: Section 12, 13, &18, T54N, R61 & 62W; Permit # 09-584

Dear Mrs. Stacy:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install, or modify the facility in accordance with general permit and the materials submitted in your application package. The General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage, http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

Additionally, the following permit condition applies:

1. Cleanouts are required every 100 feet and at all changes in direction 22.5 degrees and greater, both horizontal and vertical. This requirement includes both the pipeline from the house to the septic tank and from the septic tank to the leachfield.
2. Either a 6-inch diameter clean-out riser or a manway from each compartment of the septic tank must be extended to the ground surface from all septic tanks.

Please be advised that Crook County inspects all small wastewater systems permitted through WDEQ. Please contact Crook County Growth and Development at 307.283.4548 to arrange an inspection of the system. **Septic systems shall not be installed during adverse weather. This includes rain, snow, severely cold temperatures, or excessively moist soils.** Please contact me with questions at (307) 777-6941.

Sincerely,

Suzanne Engels
WDEQ/WQD

SE/rm/9-0950

cc: IPS, Cheyenne
WYDEQ Casper File
Tim Lyons, Crook County Growth and Development
Allan Schreier, Schreier Engineering, 511 National Street, Ste 103, Belle Fourche, SD 57717
Mark Bachman, Bachman Construction, 18814 Fruitdale Road, Belle Fourche, SD 57717





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

NOTIFICATION OF COVERAGE

November 5, 2009

Laramie County School District No. 1
Dennis Auker, Administrator
2810 House Avenue
Cheyenne, WY 82001

RE: Laramie County School District # 1-Nutrition Services and Facility Management Additions and Renovations

Application No. **09-585**, Laramie County

Dear Mr. Auker:

The above application for coverage under General Permit to Construct, Install, Modify or Operate Extensions to or Modifications of Existing Public Water Supply Distribution Systems and or Existing Sewage Collection Systems described as installation of approximately 1400 feet of 8 inch PVC water main, install one 6 inch fire sprinkler service, installation four new fire hydrants, and install one new manhole, SE ¼ Section 30, T14N R 66W; Laramie County, in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install or modify the water distribution system in accordance with Chapter 12, Section 14 of the Water Quality Division Rules and Regulations, the sewage collection system in accordance with Chapter 11, Section 9 of the Water Quality Division Rules and Regulations, and both systems in accordance with the general permit and the materials submitted in your application package. All construction, installation, or modification allowed by this notification of coverage shall be completed by November 4, 2011.

This **Notice of Coverage** is covered under the General Permits on the Wyoming Department of Environmental Quality webpage. The General Permits can be viewed at the following path: http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp. Please reference Application No. **09-585** in any future correspondence.

If you have any questions, please contact me at 307-777-7075.

Sincerely,

Richard R. Cripe PE
Southeast District Engineer
Water Quality Division

RRC/rm/9-1012

Enclosure: Certificate of Completion

cc: IPS, Cheyenne

Erin Gates, Benchmark Engineers, 1920 Thomes Ave., Suite 620, Cheyenne, WY 82001

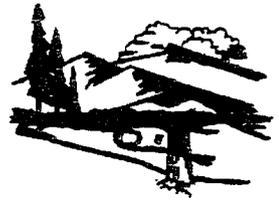
Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

April 15, 2010

Mr. Robert C. LeFaivere
320 Mansface St., Apt. 210
Green River, WY 82935

RE: Lost Creek ISR, UIC Class I application 09-586
Sweetwater County, Wyoming

Dear Mr. LeFaivere:

I have enclosed the public notice, the draft Class I well permit, the application material for the Lost Creek Project disposal wells, and the Nuclear Regulatory Commission's (NRC) Environmental Impact Statement for the Lost Creek Project. I have not included the numerous well logs and the supplemental material like lab reports of water analyses, which would have added considerably to the volume, weight, and cost of reproduction and mailing. If I had included Lost Creek ISR's application for a permit to mine, which I have looked at in the Land Quality Division offices of the Department of Environmental Quality, I would have needed three more boxes this size. The NRC source material license application from Lost Creek ISR is probably as voluminous as the permit to mine application.

My contact at the NRC is Bill Von Till, telephone number 301-415-0598. He directs several people who have been working on the Lost Creek ISR and other uranium mine applications at the NRC.

Here are some references relevant to the hydrogeology of the Great Divide Basin that should be readily available.

- Freethy, G.W., Kimball, B.A., Wilberg, D.E., and Hood, J.W., 1988, General hydrogeology of the aquifers of Mesozoic age, Upper Colorado River Basin – excluding the San Juan Basin - Colorado, Utah, Wyoming, and Arizona: U.S. Geological Survey, Hydrologic Investigations Atlas HA-698, 2 sheets.
- Geldon, A.L., 2003, Hydrologic properties and ground-water flow systems of the Paleozoic rocks in the Upper Colorado River Basin in Arizona, Colorado, New Mexico, Utah, and Wyoming, excluding the San Juan Basin: U.S. Geological Survey, Professional Paper 1411-B, 153 p.
- Mason, J.P. and Miller, K.A., 2005, Water resources of Sweetwater County, Wyoming: U.S. Geological Survey, Scientific Investigations Report 2004-5214, 188 p., 2 plates.
- Welder, G.E. and McGreevy, L.J., 1966, Ground-water reconnaissance of the Great Divide and Washakie Basins and some adjacent areas, southwestern Wyoming: U.S. Geological Survey, Hydrologic Investigations Atlas HA-219, 10 pages, 3 sheets.

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---



Both the Sweetwater County Library in Green River (call number 553.7 MASO) and the Hay Library at Western Wyoming College (call number 553.7 W291W 2005) have the publication by Mason and Miller. If it's checked out, you should be able to get it on interlibrary loan.

The following are references for more general geologic information:

- Blackstone, D.L., Jr., 1991, Tectonic relationships of the southeastern Wind River Range, southwestern Sweetwater Uplift, and Rawlins Uplift, Wyoming: Geological Survey of Wyoming, Report of Investigations No. 47, 24 p.
- Love, J.D., 1970, Cenozoic geology of the Granite Mountains area, central Wyoming: U.S. Geological Survey, Professional Paper 495-C, 154 p.
- Surdam, R.C. and Jiao, Z., 2007, The Rock Springs uplift - An outstanding geological CO₂ sequestration site in southwest Wyoming: Wyoming State Geological Survey, Challenges in Geologic Resource Development No. 2, 31 p., 1 plate.

The Hay Library also has the publications by Blackstone (call number 557.87 REP NO. 47) and Love (call number I 19.16:495-C PTS.1 & 2, MAPS). Card catalogues are a thing of the past but we got online catalogues so hopefully this will help.

Here are additional references that are available online but are probably not in any library:

- Clarey, K.E., Bartos, T., Copeland, D., Hallberg, L.L., Clark, M.L., and Thompson, M.L., 2009, Available groundwater determination, Technical Memorandum: WWDC Green River Basin Water Plan II - Groundwater Study Level I: Wyoming Water Development Commission, Technical Report, <http://waterplan.state.wy.us/plan/green/2010/finalrept/gw-finalrept.html>.
- Frantz, M., 2010, Technical Memorandum: Green River Basin Plan II, Available surface water determination: Wyoming Water Development Commission, Basin Planning Program, http://waterplan.state.wy.us/plan/green/2010/techmemos/GRB_SWaterAvailability.pdf.

If you have additional questions, feel free to call me at (307) 777-2960.

Sincerely,



George D. Langstaff
UIC Program, Water Quality Division

GDL/rm/10-0312

cc: WDEQ UIC file

STATE OF WYOMING
DEPARTMENT OF ENVIRONMENTAL QUALITY
UNDERGROUND INJECTION CONTROL PERMIT ISSUED UNDER
WYOMING WATER QUALITY RULES AND REGULATIONS
CHAPTER 13

CLASS I INJECTION WELL

(X) New
() Modified
County: Sweetwater

Permit Number: 09-586
Previous Permits: none
UIC Facility Number: WYS-037-00122

In compliance with the Wyoming Environmental Quality Act (W.S. 35-11-101 through 1104, specifically 301(a)(i) through 301 (a)(iv), Laws 1973, Ch. 250, Section 1) and Wyoming Water Quality Rules and Regulations (WQRR) Chapter 13 (Ch13).

Applicant:

Lost Creek ISR, LLC
5880 Enterprise Drive, #200
Casper, WY 82609
(307) 265-2373

Lost Creek ISR, LLC, hereafter referred as the permittee, is authorized to drill, complete, and operate the proposed wells LC DW No: 1 (already drilled but not completed), LC DW No. 2, LC DW No. 3, LC DW No. 4, and LC DW No. 5 according to the procedures and conditions of application 09-586 and to the requirements and other conditions of this permit. Issuance of a permit for a proposed well does not obligate the Department of Environmental Quality to approve injection if doing so would endanger human health or the environment or if the well does not comply with all the terms and conditions of this permit (Ch13, Sec8(e)).

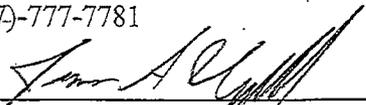
This is an area permit for five wells of the
Lost Creek Disposal Wellfield.

No additional wells may be constructed under this permit without prior permit modification.

This permit shall become effective on the date of issuance and is valid for 10 years thereafter. Any proposed well not completed before expiration of this permit will not be included in a renewal or modification of this permit.


John Wagner, Administrator
Water Quality Division
Herschler Building 4-W, 122 West 25th Street
Cheyenne, WY 82002
(307)-777-7781

28 May 2010
Date


John V. Corra, Director
Department of Environmental Quality
Herschler Building 4-W, 122 West 25th Street
Cheyenne, WY 82002

5/28/10
Date

GDL/rm/10-0450

Table of Contents

A. Discharge Zones3

B. Wells and Areas of Review3

C. Groundwater Classification7

D. Authorized Operations7

E. Prohibitions11

F. Operation and Maintenance12

G. Entry and Inspection12

H. Environmental Monitoring Program for Groundwaters of the State13

I. Monitoring Requirements13

J. Sampling and Test Procedures15

K. Records and Reports16

L. Permit Conditions19

M. Mechanical Integrity19

N. Plugging and Abandonment20

O. Duties of the Permittee20

P. Financial Responsibility21

Q. Special Permit Conditions22

R. Signatories Requirement22

S. Noncompliance23

T. Permit Transfer23

U. Property Rights24

V. Severability24

A. Discharge Zones

The disposal wells are authorized to inject into the Fort Union Formation within the intervals specified in Table 1:

Table 1. Discharge Zone(s)

Well Name	Surface Elevation	Depth to Top of Discharge Zone	Depth to Bottom of Discharge Zone	Gross Discharge Zone Thickness
LC DW No. 1	6,816 ft	6,139 ft	9,590 ft	3,451 ft
LC DW No. 2 (proposed)	6,873 ft	6,250 ft	8,350 ft	2,100 ft
LC DW No. 3 (proposed)	6,984 ft	6,350 ft	8,450 ft	2,100 ft
LC DW No. 4 (proposed)	6,959 ft	6,450 ft	8,550 ft	2,100 ft
LC DW No. 5 (proposed)	6,995 ft	6,600 ft	8,700 ft	2,100 ft

Perforations in addition to those listed in the application may be installed within the intervals given above. Perforations above or below these intervals require the prior written approval of the Administrator.

The confining zone above the discharge zone consists of approximately 300 feet of shale at the base of the Wasatch Formation with minor sandstone and siltstone in beds less than 20 feet thick and trace coal.

B. Wells and Areas of Review

The wells authorized by this permit are located as shown in Table 2:

Table 2. Well Location(s)

Well Name	Legal Description	Northing*	Easting*
LC DW No. 1	NE1/4 SW1/4 Section 25, T25N, R93W	4,665,776	261,383
LC DW No. 2 (proposed)	NE1/4 SE1/4 Section 19, T25N, R92W	4,667,177	263,882
LC DW No. 3 (proposed)	SE1/4 SW1/4 Section 13, T25N, R93W	4,668,717	261,479
LC DW No. 4 (proposed)	NW1/4 SE1/4 Section 18, T25N, R92W	4,668,854	263,537
LC DW No. 5 (proposed)	NW1/4 SE1/4 Section 17, T25N, R92W	4,669,109	265,433

*UTM Zone 13, NAD83 (meters)

Sixteenth sections included in the Area of Review (Ch13, Sec5(b)(iv)(E)) are listed in Table 3.

Table 3. Legal Description(s) of the Area(s) of Review

Well Name	Quarter-Quarters	Section	Township
LC DW No. 1	NWNW, NENW	1	T24N, R93W
	all NE, all NW	2	

Well Name	Quarter-Quarters	Section	Township
	all NE, NENW	3	T25N, R92W
	all 30		
	all SE, all SW, all NW, SWNE	19	
	SWNW, NWSW, SWSW	29	
	all but SESE	31	T25N, R93W
	all 24, 25, 26, 35, 36		
	SESE, SWSE, SESW, SWSW	13	
	SESE	14	
	all but NWNW	23	
	all NE, all SE	27	
	all NE, NESE, SESE	34	
LC DW No. 2 (proposed)	NENW, NWNW	6	T24N, R92W
	NENE, NWNE, NENW, NWNW	1	T24N, R93W
	all 17, 18, 19, 20, 21, 28, 29, 30, 31, 32		T25N, R92W
	SENE, SWNE, SENW, SWNW, all SW, all SE	7	
	SE		T25N, R93W
	SWNE, SENW, SWNW, all SW, all SE	8	
	NWSW, SWSW, SESW	9	
	SWSW	15	
	all but NENE	16	
	NWNW, SWNW, NWSW, SWSW	22	
	NWNW, SWNW, NWSW	27	
	NENE, NWNE, SWNE, all NW, NESW, NWSW, SWSW	33	
	all 13, 24, 25		
	all SE, SESW, SWSW	12	
	NENE, SENE, all SE	14	
	NENW, all NE, SENW, NESW, SESW, all SE	23	
	SE		
	SENE, all NE, NENW, all SE	26	
NENE, SENE	35		
all NE, all NW, NESW, NWSW, all SE	36		
LC DW No. 3 (proposed)	all 7, 18, 19, 30		T25N, R92W
	SWNW, all SW, NWSE, SWSE, SESE	6	
	NWNW, SWNW, SENW, all SW, NWSE, SWSE	8	
	NWNE, SWNE, all NW, all SW, all SE	17	
	NWNE, SWNE, all NW, all SW, NWSE, SWSE	20	
	all NW, NWSW	29	
	NENW, NWNW	31	
	all 11, 12, 13, 14, 15, 22, 23, 24, 25, 26		T25N, R93W
	SENE, SWNE, SENW, SWNW, all SW, all SE	1	
	SENE, SWNE, SENW, all SW, all SE	2	
	NESE, SESE, SWSE	3	
	all NE, NENW, SENW, SWNW, all SW, all	10	

Well Name	Quarter-Quarters	Section	Township
	SE		
	NENE, SENE, NESE, SESE	16	
	NENE, SENE, NESE, SESE	21	
	all NE, NENW, NWNW, SENW, NESW, all SE	27	
	NENE, NWNE, NENW, NWNW, SENE	35	
	NENE, NWNE, NENW, NWNW, SWNW, SENW, SWSE	36	
LC DW No. 4 (proposed)	all 6, 7, 8, 16, 17, 18, 19; 20, 21, 29, 30		T25N, R92W
	NWSW, SWSW, SESW	4	
	SENE, SWNE, all NW, all SW, all SE	5	
	all but NENE	9	
	NWNW, SWNW, NWSW, SWSW	15	
	SWNW, NWNW, NWSW	22	
	NWNE, SWNE, all NW, NESW, NWSW, SWSW	28	
	NENE, NWNE, NENW, NWNW	31	
	NWNE, NENW, NWNW	32	
	all 12, 13, 14, 23, 24, 25		T25N, R93W
	all NE, SENW, SWNW, all SW, all SE	1	
	NESE, SESE, SWSE	2	
	all NE, NENW, SENW, all SW, all SE	11	
	all NE, NENW, NESE	26	
NENE, NWNE	36		
LC DW No. 5 (proposed)	all 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 22, 28, 29		T25N, R92W
	SWNE, SENW, SWNW, NWNW, all SW, all SE	3	
	NWNW, SWNW, all SW	11	
	all NW, all SW	14	
	all NW, NWSW, SWSW	23	
	all NE, all NW, NESW, NWSW, SWSW	27	
	all but SWSW	30	
	NENE	31	
	NENE, NWNE, NENW, NWNW	32	
	NWNE, NENW, NWNW	33	T25N, R93W
	all 13		
	SENE, all SE	1	
	all but NWNW	12	
	all NE, all NW, NESW, SESW, all SE	24	
	all NE, NESE	25	
	SESE, SWSE	31	T26N, R92W
SESE, SWSE, SESW, SWSW	32		
SESE, SWSE, SESW, SWSW	33		

Results of the area of review calculations are shown in Table 4. The area of review is based on the larger of the radius of a pure waste cylinder, the radius of the cone of influence, or the minimum radius (Ch13, Sec5(b)(iv)).

C. Groundwater Classification

The groundwater in the Fort Union Formation aquifer system within the mine permit boundary (LQD TFN 4 6/268) and with upper and lower boundaries defined by the discharge zones in Table 1 is classified as Class VI according to Wyoming Department of Environmental Quality (WDEQ), WQRR, Chapter 8. This classification was made for the following reason(s):

- The depth and location make use of the water economically and technologically impractical (WQRR Chapter 8, Section 4.d.ix.C).

D. Authorized Operations

Well Design - Injection shall be conducted through tubing which has been secured by a packer within 500 feet of the top of the receiver aquifer (Ch13, Sec9(d)(xxv)) and which has been isolated from the long string casing by a fluid-filled annulus.

Injection Rates - Each well is allowed a maximum instantaneous injection rate shown in Table 6 provided that the surface pressure limitations are not exceeded. The permittee shall set an alarm to detect increases in the injection rate above the maximum permitted instantaneous rate and shall immediately cease injection when the alarm is triggered; or shall install a kill switch to prevent injection at above the permitted rate.

Table 4. Area of Review

	LC DW No. 1	LC DW No. 2 (proposed)	LC DW No. 3 (proposed)	LC DW No. 4 (proposed)	LC DW No. 5 (proposed)
Radius of Pure Waste Cylinder (ft)	400	400	400	400	400
Radius of Cone of Influence (ft)	8,700 (9,200)*	11,400 (12,550)*	11,650 (12,100)*	12,100 (13,500)*	12,600 (14,200)*
Minimum Radius of Area of Review (ft)	1,320	1,320	1,320	1,320	1,320

*Radius calculated with Theis equation and well function (exponential integral) rather than log approximation

Permitted Wastes - Wastes to be injected are described as follows:

Liquid waste generated by uranium mining using in-situ leaching at the Lost Creek Project including operation bleed streams, yellowcake wash water, sand filter and ion exchange wash water, on-site laboratory waste water, reverse osmosis brine, groundwater restoration and groundwater sweep solutions, plant washdown water, wash waters used in cleaning or servicing the waste disposal system equipment, and stormwater.

Fluids produced during the drilling, completion, testing, or stimulation of wells or test holes related to mining operations at the Lost Creek Project; or during the workover or abandonment of any such well; and drilling equipment wash water.

North American Industry Classification System (NAICS) -- 212291

The radionuclide-bearing waste produced at this facility by in-situ uranium mining has been defined by the Atomic Energy Act as Section 11e.(2) byproduct material and is regulated by the Nuclear Regulatory Commission (NRC) under Title 10 Code of Federal Regulations Part 40. It is not "solid waste" according to Title 40 Code of Federal Regulations Part 261.4(a)4 and is consequently not hazardous waste. Because Wyoming is a "non-agreement" state, the NRC retains jurisdiction over in-situ mining wastes and the permittee shall not use the injection wells for waste disposal without the proper NRC license.

The expected concentration ranges for selected chemical species are listed in Table 7.

Table 5. Water Quality of the Discharge

	Units	Median	Maximum	Minimum
Calcium	mg/L	unknown	1,000	200
Sodium	mg/L	unknown	3,000	150
Potassium	mg/L	unknown	1,000	10
Bicarbonate	mg/L	unknown	4,000	1,500
Carbonate	mg/L	unknown	500	0
Sulfate	mg/L	unknown	2,000	80
Chloride	mg/L	unknown	4,000	200
Ammonia (as N)	mg/L	unknown	500	50
pH	s.u.	unknown	9	6
Total Dissolved Solids (TDS)	mg/L	unknown	15,000	4,000
Uranium (as U ₃ O ₈)	mg/L	unknown	15	1
²²⁶ Radium	pCi/L	unknown	3,000	300

Permission to discharge other non-hazardous waste may be authorized through a minor permit modification (Ch13, Sec8(d)(v)). Additional monitoring may be required for additional waste types.

Permitted Corrosion Inhibitors, Anti-Scalants, and Biocides - Corrosion inhibitors, anti-scalants, and biocides may be added to the waste stream with the prior written approval of the Administrator.

Injection Pressure - The injection pressure in each injection well shall be limited to the fracture pressure of the receiver except as necessary during well stimulation approved by the Administrator (Ch13, Sec9(d)(ii)). Temporary limits are listed for each well in Table 6. The temporary limit applies until recalculation of the parameters in Table 6 following completion of a step-rate test. Exceeding the limiting surface injection pressure (LSIP) in Table 6 or creating or propagating fractures within the receiver or confining zone once waste disposal has commenced are violations of this permit and shall be reported pursuant to Section K of this permit. A high-pressure kill switch shall be installed on the injection tubing and set to preclude violations of injection pressure limits.

For each well, the permittee shall conduct a step-rate injection test within one year of permit issuance or well completion (i.e., casing cemented and perforated), whichever comes later, to determine the actual fracture pressure of the receiver (Ch13, Sec9(d)(ii)). Such tests shall be conducted using both surface and downhole gauges or transducers. The downhole device shall be placed within one hundred vertical feet of the packer. For a conclusive result, at least three of the injection rate steps below the fracture threshold will be colinear. Upon completion of the test, the permittee shall recalculate the maximum surface injection pressure (MSIP) and LSIP.

If the recalculated LSIP is greater than the temporary LSIP in Table 6, the permittee must obtain the approval of the Administrator before operating the well at a pressure above the temporary LSIP. If the new LSIP is less than the temporary LSIP in Table 6, the permittee must cease injection and not restart discharge until the wellhead pressure can be maintained below the recalculated LSIP. The permittee may conduct additional step-rate injection tests, at its discretion, to refine estimates of MSIP as injection continues.

Step-rate data, analyses, and interpretations may be included in the well completion report or submitted separately to the Administrator within one month of completion of the test or with the next quarterly report, whichever is later.

Annulus Pressure - The annulus between the injection tubing and the long string casing shall be filled with a corrosion-inhibiting fluid and be monitored and maintained in a way that allows reliable leak detection. The annulus pressure shall be maintained within the limits set in Table 6. During periods of continuous injection, the annulus pressure should be reasonably constant but large variations in pressure are allowed during startup and shutdown. The permittee shall set alarms to detect increases or decreases in annulus pressure that could indicate loss of mechanical integrity and shall immediately cease injection and shut the well in when an alarm is triggered; or the permittee shall install a kill switch to stop injection if the casing, tubing, packer, or well head leak. Settings for low- and high-pressure alarms shall take into account annulus pressure changes due to variations in temperature of the annulus fluid.

Table 6. Maximum Injection Rates, Annulus Pressures, and Maximum and Limiting Surface Injection Pressures (MSIP, LSIP)

	LC DW No. 1	LC DW No. 2 (proposed)	LC DW No. 3 (proposed)	LC DW No. 4 (proposed)	LC DW No. 5 (proposed)
Maximum Injection Rate (bbl/day)	1,714.3	1,714.3	1,714.3	1,714.3	1,714.3
Maximum Annulus Pressure (psig)	800	800	800	800	800
Minimum Annulus Pressure (psig)	200	200	200	200	200
Fracture Gradient, F_r (psi/ft)	0.50	0.50	0.50	0.50	0.50
Depth to Top of Perforations, D_p (ft)	6,139	6,300	6,400	6,500	6,650
Temperature in Well* ($^{\circ}$ F)	102	98	99	100	101
TDS of Injectate (mg/L)	15,000	15,000	15,000	15,000	15,000
Density of Injectate, ρ_j (g/cm^3)	1.0131	1.0132	1.0132	1.0132	1.0132
Injectate Fluid Gradient (psi/ft)	0.4392	0.4393	0.4392	0.4392	0.4392
$grad_j = \rho_j \cdot 12 \frac{in}{ft} \cdot 16.387 \frac{cm^3}{in^3} / 453.592 \frac{g}{lb}$					
$MSIP = (D_p \cdot F_r) - (D_p \cdot grad_j)$ (psig)	373	383	389	395	404
$LSIP = 0.9 \cdot MSIP$ (psig)	336	344	350	355	364

*Average of the injectate (assumed to be 50 $^{\circ}$ F) and formation temperatures.

New Well Construction - The permittee shall obtain written acceptance of financial assurance from WDEQ prior to completion of LC DW No. 1 and prior to construction of each of the other wells. The well(s) covered by this permit shall be cased and cemented so as to prevent movement of fluid from the well(s) or borehole(s) into any underground source of drinking water (USDW) (Ch13, Sec11(a)). All well materials shall be compatible with the wastes that may be contacted (Ch13, Sec11(b)) and the casing and cement shall be designed for the life expectancy of the well (Ch13, Sec11(c)).

Any well stimulation activities require prior approval of the Administrator.

The packer at the bottom of the tubing shall be set within 500 feet of the top of the authorized discharge zone (Table 1) for each well and within a zone of good quality cement bond as shown by a cement bond log (Ch13, Sec9(d)(xxv)).

Injection into a well may not begin until:

1. Well construction is complete (Ch13, Sec9(d)(xxix)); and
2. The permittee has submitted a well completion and testing report and the "Notification of Completion of Construction of Injection Well" (available on the WQD - UIC Program web site - <http://deq.state.wy.us/wqd/groundwater/uicprogram/index.asp>) for a newly constructed or modified well; and
3. The permittee has provided the Administrator with sufficient notice to allow for inspection of the well (Ch13, Sec9(d)(xxiv)); and
4. Mechanical integrity of the well and cement bonding of the long string casing have been proven or demonstrated to the satisfaction of the Administrator; and
5. The permittee has demonstrated financial assurance (Ch13, Sec17(a)).
6. The permittee has received written approval from the Administrator to begin injection.

E. Prohibitions

This permit does not allow for the injection of any hazardous waste as defined in 40 CFR 261.3 or in Wyoming Solid Waste Management Rules and Regulations, Chapter 2. Injection of any substance defined as a hazardous waste, whether hazardous by listing or by characteristic is a violation of this permit.

No person shall conduct any authorized injection activity in a manner that results in a violation of any permit condition or representations made in the application (Ch13, Sec18(b)(i)).

No person shall conduct any authorized injection activity in a manner that results in a movement of fluids out of the receiver (Ch13, Sec18(b)(ii)).

No zone or interval other than the discharge zone shall be used as a receiver for the discharge (Ch13, Sec18(b)(ii)(A)).

No uncased hole may be used as a conduit for the discharge, excepting that portion of a hole in the discharge zone (Ch13, Sec18(b)(ii)(B)).

No annular space between the wall of the hole and casing in the hole may be used as a conduit for discharge, excepting in that portion of a hole in the discharge zone (Ch13, Sec18(b)(ii)(C)). The annular space may receive fluids used in cementing casing during the cementing process.

No person shall construct, install, modify, or improve an authorized injection facility except in compliance with this permit (Ch13, Sec18(b)(iii)).

F. Operation and Maintenance

Each injection well shall be constructed, operated, and maintained to prevent movement of fluid from the well into any USDW (Ch13, Sec11(a)).

The permittee shall operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes mechanical integrity of the well, effective performance, adequate funding, operator staffing and training, and laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit (Ch13, Sec9(d)(vi)).

The permittee is required to operate the facility in accordance with statements, representations and procedures presented in the complete permit application and supporting documents as accepted and approved by the Administrator. If such procedures conflict with those in this permit, the conditions in this permit shall take precedence (Ch13, Sec18(b)(i)).

Measuring and recording devices shall be tested and calibrated at a frequency sufficient to ensure accurate and precise measurements. A record of the date of the most recent calibration or maintenance shall be retained at the well site.

G. Entry and Inspection

The permittee shall allow the Administrator, or an authorized representative of the Administrator (upon presentation of credentials and during normal working hours) to enter the premises where a regulated facility is located, or where records are kept under the conditions of this permit; to inspect and photograph the discharge and related facilities and equipment; to review and copy reports and records required by this permit; to collect fluid samples for analysis; to measure and record pressures and water levels; to observe and record data from monitoring equipment; and to perform any other function authorized by law or regulation (Ch13, Sec9(d)(xii)).

Inspectors shall not be required by the permittee to sign any waiver of liability.

H. Environmental Monitoring Program for Groundwaters of the State

The permittee shall furnish the Administrator any information necessary to establish a monitoring program if requested to do so (Ch13, Sec9(d)(xiii)).

No groundwater monitoring program under this permit, other than that described in Section I, is required because of the reduction in risk of pollution due to the depth and confinement of the receiver aquifers (Ch13, Sec13(a)(ii)).

I. Monitoring Requirements

1. The permittee shall retain records of all monitoring information (Ch13, Sec9(d)(xiv)) including all calibration and maintenance records and all original chart recordings for a period of three years after closure of the facility (Ch13, Sec15(g)), at which time the permittee shall notify the Administrator and either deliver the records to the Water Quality Division (WQD) or discard them as directed by the Administrator.
2. Records of monitoring information shall include:
 - a. The date, exact place, and time of sampling or measurements;
 - b. The name(s) of individual(s) who performed the sampling or measurements;
 - c. The types of sample containers used, methods of preservation, and holding times;
 - d. The date(s) analyses were performed;
 - e. The name(s) of individual(s) who performed the analyses;
 - f. The analytical techniques or methods used;
 - g. The results and precision of such analyses.

Operational Monitoring (Ch13, Sec13(b)(ii)):

Injection Pressure - The permittee shall monitor the injection pressure continuously and record the readings on a strip chart recorder, a circular chart recorder, or electronically (Ch13, Sec13(i)).

Injection Rate and Volume - The permittee shall monitor the injection rate and volume continuously and record both on a strip chart recorder, circular chart recorder, or electronically (Ch13, Sec13(i)).

Annulus Pressure - The permittee shall continuously monitor the pressure of the casing - tubing annulus and record the pressures on a strip chart recorder, a circular chart recorder, or electronically (Ch13, Sec13(i)).

Discharge Zone Reservoir Pressure, Reservoir Boundaries or Anomalies, Hydraulic Conductivity, and Skin Factor - The permittee shall shut-in each well covered by this permit annually for a period of time long enough to observe a valid pressure fall-off curve. (Ch13, Sec13(e)). For the first test, the minimum duration of injection and fall-off shall be calculated according to the equations on page A-4 of the "UIC Pressure Falloff Testing Guideline" (USEPA Region 6, August 2002), or the equivalent equations in subsequent editions. Durations for subsequent tests shall be longer than wellbore storage and skin effects and sufficient for accurate estimates of aquifer permeability. Tests shall be analyzed by the permittee using commonly accepted methods to obtain hydraulic conductivity or permeability, transmissivity, and skin factor and to identify reservoir boundaries (including flow in fractures) and other anomalies such as partial penetration or layering. The test method chosen should be justified by a review of relevant assumptions and actual well and aquifer conditions. Along with the analysis and interpretation, the permittee shall submit plots of injection rate, pressure, and the pressure derivative versus time on appropriate graphs. If the method used differs from previous methods used for the same well, the analyst should discuss the comparability of the results.

Digital data, results, analyses, and interpretations for the fall-off test shall be submitted to the Administrator within one month or with the next quarterly report after the test is done, whichever is later (Ch13, Sec15(f)). These data shall include pressures starting with the introduction of the pressure-measuring device into the well (or for at least one hour prior to test start for a permanently installed downhole device); and injection rates starting at least twice the fall-off period before the start of the fall-off test.

Radius of Influence - The results of each pressure fall-off test shall be used to update the radius of influence calculation for each discharge zone. These updates shall account for historical injection and remaining project life. The permittee shall provide a map showing the updated radius of influence and all wells which penetrate the confining zone within the old and new radii of influence.

If the updated radius of influence for any discharge zone expands to encompass wells not previously identified as within the area of review, construction and plugging and abandonment records for those wells shall be submitted to the Administrator. For those wells which the Administrator determines to be inadequately completed or plugged or which lack sufficient supporting information, the permittee shall submit a corrective action plan to prevent movement of fluid into any USDW through those wells. Upon approval by the Administrator, this plan shall be incorporated as a permit requirement.

Physical and Chemical Properties of the Injectate - The permittee shall monitor the quality of the injectate quarterly (Ch13, Sec15(c)(v)), when significant process changes occur, or when operating changes may significantly alter the waste stream (Ch13, Sec13(h)). The samples must be representative of the waste as it enters the wells. If all the wells receive waste from the same pipe exiting the uranium processing plant, samples may be collected from that pipe rather than from individual wells. Table 7 lists the analytes and parameters to be analyzed quarterly. WQD may approve alternate methods to those listed in Table 7 upon receipt of a written request describing the procedures, precision, and accuracy of the proposed method and a comparison of the proposed method with that in Table 7.

The first five parameters in Table 7 shall be measured weekly at the mine site and averaged mathematically for the quarter. Samples for uranium and radium analysis shall be collected weekly and physically composited for the quarter and then analyzed once per quarter at a lab certified by USEPA for radionuclide analysis.

Table 7. Analyte and Parameter List for Quarterly Analyses of Injectate

EPA Analytical Method	Analyte or Parameter	CAS Number
SM2550 B	Temperature	None
120.1	Specific Conductance	None
SM4500-H ⁺ B	pH	None
	Specific Gravity	None
SM2540	Total Dissolved Solids	None
200.7 or 200.8	Uranium	7440-61-1
903.0	²²⁶ Radium	13982-63-3

Note: Methods preceded by "SM" are standard methods.

Limiting Concentrations of Injectate - Upper control limits for this permit are listed in Table 8. pH has both upper and lower control limits and concentrations must remain within the range indicated in Table 8. Exceedances of these values are a violation of this permit and require notification under Section K of this permit.

Table 8. Control Limits for Injected Waste

Analyte or Parameter	Upper Control Limit
pH	6.0 > pH < 10 s.u.

J. Sampling and Test Procedures

The following units are to be used where applicable: pounds (mass) per square inch for pressure with gage or absolute pressure noted (psig or psia); standard oil field barrels (bbl, equivalent to 42 gallons) for fluid volume; standard oil field barrels per day (bbl/day) for fluid flow rates; milligrams per liter (mg/L) for analyte concentrations other than pH in standard log units or radium, radioactive strontium isotopes, and gross alpha particle radioactivity in picoCuries per liter (pCi/L). The permittee may report equivalent quantities in other units in addition to those above.

Procedures and methods for sample collection and analyses shall be implemented by the permittee to ensure that the samples are representative of the groundwater, water, or wastes being sampled (Ch13, Sec14(a)).

A trip blank of distilled water shall be collected for each quarterly sampling date and a duplicate sample shall be collected at least once per year. Blank and duplicate results and chain-of-custody forms shall be included in the quarterly reports.

Procedures for mechanical integrity tests are described in Section M.

Procedures for pressure fall-off tests are described under Operational Monitoring in Section I.

Procedures for step-rate injection tests are described under Injection Pressure in Section D.

K. Records and Reports

1. Record Retention - The permittee shall retain copies of all reports required by this permit, and records of all data used to complete the application for this permit until the permit expires. As described in Section I.2, monitoring records shall be retained for three years after well closure (Ch13, Sec15(g)).
2. Electronic Data Deliverable (EDD) Reporting - The permittee shall use EDD reporting if required by the Administrator.
3. Compliance Schedule Reports - If a compliance schedule is required by the Administrator, reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any such schedule shall be submitted no later than thirty days following each schedule date (Ch13, Sec9(d)(xx)).
4. Noncompliance Event Reports - See Section S.
5. Other Noncompliance Reports - The permittee shall report all instances of noncompliance not reported otherwise, and submit the information listed for the written report in Section S with the next quarterly report (Ch13, Sec9(d)(xxii)).
6. Quarterly Reports - Quarterly reports shall be submitted to the Administrator no later than 30 days after the end of each calendar quarter (Ch13, Sec15(a) and 15(c)). The mailing address is: UIC Program Supervisor, DEQ - Water Quality Division, 122 W. 25th St. - 4W, Cheyenne, WY 82002. The quarterly results shall also be submitted online at <http://gem.trihydro.com> within 30 days of the end of quarter. The written quarterly report shall include the following information:
 - a. The minimum, average, and maximum instantaneous injection rates for each well for each month of the quarter. The page showing the maximum injection rates shall also show the maximum permitted injection rate for comparison.
 - b. The minimum, average, and maximum daily injection pressures for each well for each month of the quarter (Ch13, Sec15(c)(i)). The table or graph showing the maximum injection pressures shall also show the maximum permitted injection pressure for comparison and the pressures at which any alarms or kill switches are activated.
 - c. The total injection volume in barrels for each well for each month of the quarter, the total for the quarter, and the total cumulative volume of waste injected to date (Ch13, Sec15(c)(iv)).

- d. The maximum and minimum annulus pressures for each well for each month of the quarter. The table or graph showing the annulus pressures shall also show the pressures at which any alarms or kill switches are activated.
- e. Any quarterly analytical results required by Section I of this permit (Ch13, Sec15(c)(v)).
- f. Any permit exceedances within the quarter.
- g. Any events that triggered alarms or shutdowns and the responses taken during the quarter shall be fully described (Ch13, Sec15(c)(iii)).
- h. Any well tests conducted more than thirty days before the end of the quarter (e.g., mechanical integrity, pressure fall-off, or step-rate injection) (Ch13, Sec15(f)) and reports of well workovers (Ch13, Sec(c)(vi)). See also item K.8.
7. Annual Reports - Annual reports shall be submitted to the Administrator at the same address as the quarterly reports. They are due no later than thirty days after the end of each calendar year (Ch13, Sec15((c)). The annual report for each well shall include the following information in addition to that required for the quarterly report:
- a. A graphical representation of the injection pressures and volumes for the previous five year's operation and a digital file (e.g., .csv, .txt., .xls, .xlsx) containing these data. The graph shall have calendar dates as the abscissa and pressure and volume as the ordinates.
- b. Graphical representations of the quality of the injected waste over time and a digital file (e.g., .csv, .txt., .xls, .xlsx) containing these data. The graphs shall show the injectate quality for the previous five year's operation and shall be prepared on scales appropriate to the variation observed.
8. Well Tests - Reports of well tests conducted less than thirty days before the end of a calendar quarter shall be submitted within thirty days of test completion (Ch13, Sec15(f)).
9. Reports for Aborted Operations - A comprehensive report for any aborted or curtailed operation, which results in the complete termination of discharge or associated activity, shall be submitted to the Administrator within thirty (30) days of termination in lieu of an annual report (Ch13, Sec15(d)).
10. Reports of Plugging and Abandonment - A report of plugging and abandonment (Section N) shall be submitted as soon as practicable after a well is plugged (Ch13, Sec9(d)(xxvii)).

11. Well Completion Report - A report of well construction, completion, and testing and "Notification of Completion of Construction of Injection Well" shall be submitted prior to injection into a new or modified well (see New Well Construction in Section D).

L. Permit Conditions

This permit is issued for a period of ten years (Ch13, Sec9(a)). If the permittee wishes to continue injection after the expiration date of this permit, he should apply to the Administrator at least four months prior to the expiration date of this permit (Ch13, Sec9(d)(iii)).

It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit (Ch13, Sec9(d)(iv)).

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation.

The filing of a request by the permittee, or at the instigation of the Administrator, for permit modification, revocation, or termination, or the notification of planned changes or anticipated noncompliance shall not stay any condition of this permit (Ch13, Sec9(d)(ix)).

After notice and opportunity for a hearing, the Administrator may modify or revoke a permit, in whole or in part, during its term for cause. Causes include, but are not limited to, the following:

1. Noncompliance with terms or conditions of this permit (Ch13, Sec8(e)(i));
2. Failure in the application or during the issuance process to disclose fully all relevant facts, or misrepresenting any relevant facts at any time (Ch13, Sec8(e)(ii)); or
3. Failure of the casing, cement, or the confining layer; or
4. A determination that the activity endangers human health or the environment and can only be regulated to acceptable levels by a permit modification or termination (Ch13, Sec8(e)(iii)).

Permits will be automatically terminated after closure and release of financial responsibility by the Administrator (Ch13, Sec8(i)).

This permit will be reviewed by WQD at least once every five (5) years, and may be reviewed more frequently (Ch13, Sec9(b)). Permits that do not satisfy the review criteria are subject to modification, revocation and reissuance, or termination (Ch13, Sec9(c)).

The conditions in this permit supersede any application content (Ch13, Sec18(b)(i)).

M. Mechanical Integrity

Mechanical integrity shall be maintained continuously and tested at intervals of no longer than five years. The test used to determine mechanical integrity shall be a two part test approved by the Administrator (Ch13, Sec9(d)(vii)). The two parts shall be conducted no more than three months apart unless prior approval is obtained from the Administrator.

Part I of the mechanical integrity test shall demonstrate the absence of leaks through the packer, tubing, casing, and wellhead (Ch13, Sec9(d)(vii)(A)). Prior to the commencement of waste injection and at intervals of no longer than five years thereafter, and more frequently if required by the Administrator, the casing - tubing annulus of each well shall be pressure tested such that the surface annulus pressure is at least 100 psi greater than the maximum historical injection pressure, which may be less than the LSIP (Table 6), and that the annulus pressure at the packer is at least 20 psi greater than the tubing pressure at the packer. A pressure change of less than 10% after thirty minutes shall be considered successful. A continuous record of the injection pressure during the test on a chart or at intervals of one minute or less, the specific gravities of the annulus and tubing fluids, and the injection pressure at the time of the test shall be submitted to the Administrator along with the other test results.

Part II of the mechanical integrity test shall demonstrate the absence of fluid movement behind the casing (Ch13, Sec9(d)(vii)(B)) above the topmost perforation. Prior to the commencement of waste injection and at intervals of no longer than five years thereafter, and more frequently if required by the Administrator, each well shall be logged using a radioactive tracer survey or oxygen activation log and a temperature survey. The static temperature log shall start more than two hours, and preferably more than 24 hours, after injection has ceased. The results and their interpretation shall be submitted to the Administrator along with the next quarterly report.

Other types of logs may be substituted for Part II of the mechanical integrity test if they satisfy Chapter 13, Section 9. (d) (vii) and are approved by the Administrator.

WQD shall be notified at least 30 days prior to a mechanical integrity test.

In the case of a failed mechanical integrity test in a well that has begun waste disposal, the well shall be immediately shut-in (Ch13, Sec9(d)(viii)). The Administrator shall be notified by telephone at (307) 777-7781 within twenty-four hours of the test and a written report shall be submitted within seven days. Injection shall not resume until the well has been repaired, a complete mechanical integrity test has been passed, and written permission to resume operation has been obtained from the Administrator.

If at any time injection occurs in any zone not within the discharge zone, a permit violation has occurred. The operator shall prepare an estimate of the volume and quality of all wastewaters which were injected outside of the discharge zone. In the case where any aquifer meeting the standards for Class I through IVA under Wyoming Water Quality Rules and Regulations, Chapter 8, has been contaminated due to out of zone injection, the operator shall prepare and implement a plan to recover these solutions. Injection shall not resume until the well

has been repaired, a complete mechanical integrity test has been passed, and written permission to resume operation has been obtained from the Administrator.

N. Plugging and Abandonment

Any well under this permit shall be plugged and abandoned within six months after:

- Permit expiration (unless application for a new permit has been made and has not been denied by the Administrator);
- Final cessation of injection activities; or
- The permittee has removed equipment required for the proper operation and monitoring of the well (except for temporary removal during well maintenance).

The permittee shall notify the Administrator of plans to convert or abandon a well at least 90 days prior to the start of any conversion or abandonment activity (Ch13, Sec9(d)(xxvi)). The permittee shall follow the plugging and abandonment procedure described in the application or subsequently prescribed by the Administrator. The procedure shall include well plugging, abandonment, surface reclamation and seeding of the well site, closure of related surge ponds, and removing or purging and plugging of any underground piping. In no case shall the procedure be less stringent than that required by USEPA for Class I non-hazardous waste disposal wells at the time of abandonment (e.g., Title 40 Code of Federal Regulations Part 146.10)

As soon as practicable after plugging and abandonment of any well covered by this permit, the permittee shall submit a plugging and abandonment report describing all activities and detailing any deviations from the original plan (Ch13, Sec9(d)(xxvii)).

O. Duties of the Permittee

Duty to Comply - The permittee shall comply with all conditions of this permit (Ch13, Sec9(d)(i)), all rules and regulations of the Department of Environmental Quality, and all applicable state and federal laws. Nothing in this permit relieves the permittee of any duties under applicable regulations.

Duty to Mitigate - The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit (Ch13, Sec9(d)(v)).

Duty to Give Notice of Changes - The permittee shall give advance notice to the Administrator as soon as possible of any planned physical alteration or additions, other than authorized operation and maintenance, to the permitted facility and receive authorization prior to implementing the proposed alteration or addition (Ch13, Sec9(d)(xvi)).

Duty to Warn of Noncompliance - The permittee shall give advance notice to the Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements (Ch13, Sec9(d)(xvii)).

Duty to Provide Information for Permit Modification - The permittee shall furnish the Administrator within a reasonable time, any information which the Administrator may request to

determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit (Ch13, Sec9(d)(xi)).

Duty to Provide Records - The permittee shall furnish the Administrator, upon request, copies of records required to be kept by this permit (Ch13, Sec9(d)(xi)).

Duty to Amend Permit - Any modification that will result in a violation of any permit condition shall be reported to the Administrator through the submission of a new or amended permit application and shall not be implemented until a new or modified permit has been issued (Ch13, Sec9(d)(xvii)).

Duty to Correct - The permittee shall report all instances where it becomes aware that it failed to submit any relevant facts in the permit application, or where it submitted incorrect information in a permit application or in any report to the Administrator, and shall promptly submit such facts or information (Ch13, Sec9(d)(xxiii)).

Duty to Monitor - Monitoring results shall be obtained and reported at the intervals specified elsewhere in this permit (Ch13, Sec9(d)(xix)).

Duty to Test - Test results shall be obtained and reported at the intervals specified elsewhere in this permit.

Duty to Provide Current Contact Information - The permittee shall report any changes to physical or mailing address, phone, or email, and any changes of the personnel responsible for complying with this permit to WQD within one month of the change.

P. Financial Responsibility

The permittee is required to maintain financial assurance, in a form approved by the Administrator, to close, plug, and abandon the injection well operation and to reclaim the surface facilities in a manner approved by the Administrator (Ch13, Sec17(a)).

The obligation to maintain financial responsibility survives the termination of the permit or the cessation of injection (Ch13, Sec17(c)).

If the institution issuing the financial instrument files for bankruptcy or loses its authority to issue financial instruments, the permittee shall notify the Administrator within two weeks and obtain other financial assurance within two months. If the permittee is named as debtor in any voluntary or involuntary bankruptcy proceeding, it must notify the Administrator within two weeks.

A minimum of \$306,270 for plugging and abandonment of injection wells LC DW No. 1, LC DW No. 2, and LC DW No. 3 shall be included in the bond for reclamation and restoration of the Lost Creek ISR Project uranium facilities under Permit to Mine TFN 4-6/268. This bond or replacement financial instrument shall be maintained as long as any of the wells is covered under this permit. Work on any of these wells may not begin until the Administrator of the Land Quality Division has accepted the financial instrument provided by Lost Creek ISR, LLC.

Construction of LC DW No. 4 or LC DW No. 5 may not begin until an appropriate financial instrument has been obtained by the permittee and accepted by the Administrator.

Q. Special Permit Conditions

In addition to the conditions required of all permits, the Administrator may establish specific conditions so as to prevent the migration of fluids into USDWs (Ch13, Sec9(e)). The following conditions are established for this permit:

- Due to the presence of faults with surface expression within the project area, the permittee shall collect water quality samples, using a method approved by the Administrator, above and below the confining zone at the base of the Wasatch Formation in each new well to demonstrate the integrity of the confining zone. The number of samples, depths, and analytes shall be chosen by the permittee so as to produce a statistically significant result. The Administrator may waive the sampling requirement on a well-by-well basis. The water quality results, analyses, and interpretations shall be submitted to the Administrator no later than the well completion and testing report required for new wells in Section D.
- If the sampling above demonstrates there may be leakage through the confining zone, the permittee shall submit a revised well construction plan with deeper perforations to be approved by the Administrator prior to well completion.

The following conditions are adopted to comply with the Governor's Executive Order 2008-2 on Greater Sage-Grouse Core Area Protection:

- No construction activities related to the Class I wells may begin until Lost Creek ISR has obtained a permit to mine from the Land Quality Division.
- All activities and habitat disturbances related to the Class I wells shall be covered by the relevant stipulations to protect sage grouse habitat in the permit to mine.
- Any conditions in the permit to mine regarding the Great Basin spadefoot toad shall become conditions of this permit to the extent they are applicable to the construction and operation of the Class I wells.

R. Signatories Requirement

All reports filed in conjunction with this permit shall contain the following certification (Ch13, Sec9(d)(xv)):

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment." (Form UIC-1-I Rev 3/93)

All reports required by this permit and other requested information shall be signed by a responsible officer as described in WQRR Chapter 13, Section 5(b)(xiv));

or

By a duly authorized representative. A person is a duly authorized representative only if:

1. The authorization is made in writing by one of the prescribed principals;
2. The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility or activity; and
3. The written authorization is submitted to the Administrator.

If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the Administrator prior to, or together with, any reports or information to be signed by the new authorized representative.

S. Noncompliance

Any permit noncompliance constitutes a violation of WQRR Chapter 13 and is grounds for enforcement action, permit termination, revocation, or modification. Confirmed noncompliance resulting in a migration of injected fluid outside the discharge zone shall be reported to the Administrator at (307) 777-7781 within twenty-four (24) hours from the time the permittee becomes aware of the circumstances and a written report shall be provided within five days (Ch13, Sec9(d)(xxi)).

The oral report should include:

- a. Any monitoring or other information which indicates that any contaminant may cause an endangerment to a useable groundwater of the state.
- b. Any noncompliance with a permit condition or malfunction of the discharge (injection) system which may cause fluid migration into or between useable groundwaters of the state.

The written report should include:

- a. A description of the noncompliance and its cause;
- b. The period of noncompliance, including exact dates and times;
- c. If the noncompliance has not been corrected, the anticipated time it is expected to continue; and
- d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance (Ch13, Sec9(d)(xxi)).

T. Permit Transfer

Any transfer of this permit shall be accomplished by the submission of the proper forms for permit transfer to the Administrator. Transfer of this permit must first be approved by the Administrator and no transfer shall be approved unless the proposed permittee agrees to correct any and all noncompliance issues (Ch13, Sec9(d)(xviii) and Ch13, Sec8(k)).

~~This permit automatically terminates upon completion of a permit transfer (Ch13, Sec8(j)).~~

The permittee is alone responsible for the operation of the facility covered by this permit. Operation of this facility by another entity is a violation of this permit unless a transfer of this permit has first been accomplished.

U. Property Rights

This permit does not convey any property rights or any exclusive privileges. This permit does not authorize any injury to private property or any invasion of personal rights; nor any infringement of federal, state, or local laws or regulations (Ch13, Sec9(d)(x)).

The state of Wyoming recently passed Wyoming statute §34-1-152 and amended Wyoming statute §34-1-202 regarding the ownership of pore space within the subsurface. WDEQ recommends that permittees consider how these laws may apply to their injection of material into the subsurface.

V. Severability

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

Abbreviations:

USDW – underground source of drinking water (Classes I, II, III, IV(a), Special(A))

USEPA – United States Environmental Protection Agency

WDEQ – Wyoming Department of Environmental Quality

WQD – Water Quality Division of WDEQ

WQRR – WDEQ Water Quality Rules and Regulations

STATE OF WYOMING
DEPARTMENT OF ENVIRONMENTAL QUALITY
UNDERGROUND INJECTION CONTROL PERMIT ISSUED UNDER
WYOMING WATER QUALITY RULES AND REGULATIONS
CHAPTER 13

CLASS I INJECTION WELL

(X) New
() Modified
County: Sweetwater

Permit Number: **09-586**
Previous Permits: none
UIC Facility Number: WYS-037-00122

In compliance with the Wyoming Environmental Quality Act (W.S. 35-11-101 through 1104, specifically 301(a)(i) through 301 (a)(iv), Laws 1973, Ch. 250, Section 1) and Wyoming Water Quality Rules and Regulations (WQRR) Chapter 13 (Ch13).

Applicant:

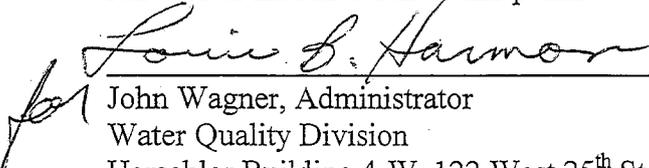
Lost Creek ISR, LLC
5880 Enterprise Drive, #200
Casper, WY 82609
(307) 265-2373

Lost Creek ISR, LLC, hereafter referred as the permittee, is authorized to drill, complete, and operate the proposed wells LC DW No. 1 (already drilled but not completed), LC DW No. 2, LC DW No. 3, LC DW No. 4, and LC DW No. 5 according to the procedures and conditions of application 09-586 and to the requirements and other conditions of this permit. Issuance of a permit for a proposed well does not obligate the Department of Environmental Quality to approve injection if doing so would endanger human health or the environment or if the well does not comply with all the terms and conditions of this permit (Ch13, Sec8(e)).

This is an area permit for five wells of the
Lost Creek Disposal Wellfield.

No additional wells may be constructed under this permit without prior permit modification.

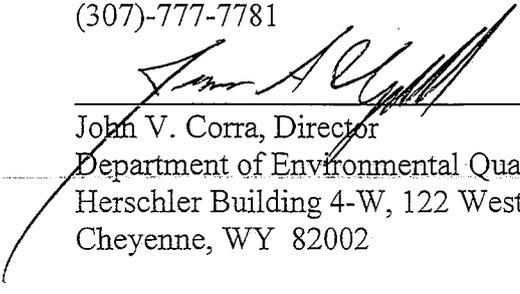
This permit shall become effective on the date of issuance and is valid for 10 years thereafter. Any proposed well not completed before expiration of this permit will not be included in a renewal or modification of this permit.



John Wagner, Administrator
Water Quality Division
Herschler Building 4-W, 122 West 25th Street
Cheyenne, WY 82002
(307)-777-7781

28 May 2010

Date



John V. Corra, Director
Department of Environmental Quality
Herschler Building 4-W, 122 West 25th Street
Cheyenne, WY 82002

5/28/10

Date

GDL/rm/10-0450

Table of Contents

A. Discharge Zones 3

B. Wells and Areas of Review 3

C. Groundwater Classification 7

D. Authorized Operations 7

E. Prohibitions 11

F. Operation and Maintenance 12

G. Entry and Inspection 12

H. Environmental Monitoring Program for Groundwaters of the State 13

I. Monitoring Requirements 13

J. Sampling and Test Procedures 15

K. Records and Reports 16

L. Permit Conditions 19

M. Mechanical Integrity 19

N. Plugging and Abandonment 20

O. Duties of the Permittee 20

P. Financial Responsibility 21

Q. Special Permit Conditions 22

R. Signatories Requirement 22

S. Noncompliance 23

T. Permit Transfer 23

U. Property Rights 24

V. Severability 24

A. Discharge Zones

The disposal wells are authorized to inject into the Fort Union Formation within the intervals specified in Table 1:

Table 1. Discharge Zone(s)

Well Name	Surface Elevation	Depth to Top of Discharge Zone	Depth to Bottom of Discharge Zone	Gross Discharge Zone Thickness
LC DW No. 1	6,816 ft	6,139 ft	9,590 ft	3,451 ft
LC DW No. 2 (proposed)	6,873 ft	6,250 ft	8,350 ft	2,100 ft
LC DW No. 3 (proposed)	6,984 ft	6,350 ft	8,450 ft	2,100 ft
LC DW No. 4 (proposed)	6,959 ft	6,450 ft	8,550 ft	2,100 ft
LC DW No. 5 (proposed)	6,995 ft	6,600 ft	8,700 ft	2,100 ft

Perforations in addition to those listed in the application may be installed within the intervals given above. Perforations above or below these intervals require the prior written approval of the Administrator.

The confining zone above the discharge zone consists of approximately 300 feet of shale at the base of the Wasatch Formation with minor sandstone and siltstone in beds less than 20 feet thick and trace coal.

B. Wells and Areas of Review

The wells authorized by this permit are located as shown in Table 2:

Table 2. Well Location(s)

Well Name	Legal Description	Northing*	Easting*
LC DW No. 1	NE1/4 SW1/4 Section 25, T25N, R93W	4,665,776	261,383
LC DW No. 2 (proposed)	NE1/4 SE1/4 Section 19, T25N, R92W	4,667,177	263,882
LC DW No. 3 (proposed)	SE1/4 SW1/4 Section 13, T25N, R93W	4,668,717	261,479
LC DW No. 4 (proposed)	NW1/4 SE1/4 Section 18, T25N, R92W	4,668,854	263,537
LC DW No. 5 (proposed)	NW1/4 SE1/4 Section 17, T25N, R92W	4,669,109	265,433

*UTM Zone 13, NAD83 (meters)

Sixteenth sections included in the Area of Review (Ch13, Sec5(b)(iv)(E)) are listed in Table 3.

Table 3. Legal Description(s) of the Area(s) of Review

Well Name	Quarter-Quarters	Section	Township
LC DW No. 1	NWNW, NENW	1	T24N, R93W
	all NE, all NW	2	

Well Name	Quarter-Quarters	Section	Township
	all NE, NENW	3	T25N, R92W
	all 30		
	all SE, all SW, all NW, SWNE	19	
	SWNW, NWSW, SWSW	29	
	all but SESE	31	T25N, R93W
	all 24, 25, 26, 35, 36		
	SESE, SWSE, SESW, SWSW	13	
	SESE	14	
	all but NWNW	23	
	all NE, all SE	27	
	all NE, NESE, SESE	34	
	LC DW No. 2 (proposed)	NENW, NWNW	
NENE, NWNE, NENW, NWNW		1	T24N, R93W
all 17, 18, 19, 20, 21, 28, 29, 30, 31, 32			T25N, R92W
SENE, SWNE, SENW, SWNW, all SW, all SE		7	T25N, R93W
SWNE, SENW, SWNW, all SW, all SE		8	
NWSW, SWSW, SESW		9	
SWSW		15	
all but NENE		16	
NWNW, SWNW, NWSW, SWSW		22	
NWNW, SWNW, NWSW		27	
NENE, NWNE, SWNE, all NW, NESW, NWSW, SWSW		33	
all 13, 24, 25			
all SE, SESW, SWSW		12	
NENE, SENE, all SE		14	
NENW, all NE, SENW, NESW, SESW, all SE		23	
SENE, all NE, NENW, all SE		26	
NENE, SENE		35	
all NE, all NW, NESW, NWSW, all SE	36		
LC DW No. 3 (proposed)	all 7, 18, 19, 30		T25N, R92W
	SWNW, all SW, NWSE, SWSE, SESE	6	T25N, R93W
	NWNW, SWNW, SENW, all SW, NWSE, SWSE	8	
	NWNE, SWNE, all NW, all SW, all SE	17	
	NWNE, SWNE, all NW, all SW, NWSE, SWSE	20	
	all NW, NWSW	29	
	NENW, NWNW	31	
	all 11, 12, 13, 14, 15, 22, 23, 24, 25, 26		
	SENE, SWNE, SENW, SWNW, all SW, all SE	1	T25N, R93W
	SENE, SWNE, SENW, all SW, all SE	2	
	NESE, SESE, SWSE	3	
	all NE, NENW, SENW, SWNW, all SW, all	10	

Well Name	Quarter-Quarters	Section	Township	
	SE			
	NENE, SENE, NESE, SESE	16		
	NENE, SENE, NESE, SESE	21		
	all NE, NENW, NWNW, SENW, NESW, all SE	27		
	NENE, NWNE, NENW, NWNW, SENE	35		
	NENE, NWNE, NENW, NWNW, SWNW, SENW, SWSE	36		
LC DW No. 4 (proposed)	all 6, 7, 8, 16, 17, 18, 19, 20, 21, 29, 30		T25N, R92W	
	NWSW, SWSW, SESW	4		
	SENE, SWNE, all NW, all SW, all SE	5		
	all but NENE	9		
	NWNW, SWNW, NWSW, SWSW	15		
	SWNW, NWNW, NWSW	22		
	NWNE, SWNE, all NW, NESW, NWSW, SWSW	28		
	NENE, NWNE, NENW, NWNW	31		
	NWNE, NENW, NWNW	32		
	all 12, 13, 14, 23, 24, 25			T25N, R93W
	all NE, SENW, SWNW, all SW, all SE	1		
	NESE, SESE, SWSE	2		
	all NE, NENW, SENW, all SW, all SE	11		
	all NE, NENW, NESE	26		
NENE, NWNE	36			
LC DW No. 5 (proposed)	all 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 22, 28, 29		T25N, R92W	
	SWNE, SENW, SWNW, NWNW, all SW, all SE	3		
	NWNW, SWNW, all SW	11		
	all NW, all SW	14		
	all NW, NWSW, SWSW	23		
	all NE, all NW, NESW, NWSW, SWSW	27		
	all but SWSW	30		
	NENE	31		
	NENE, NWNE, NENW, NWNW	32		
	NWNE, NENW, NWNW	33		
	all 13		T25N, R93W	
	SENE, all SE	1		
	all but NWNW	12		
	all NE, all NW, NESW, SESW, all SE	24		
	all NE, NESE	25		
	SESE, SWSE	31		
		SESE, SWSE, SESW, SWSW	32	T26N, R92W
		SESE, SWSE, SESW, SWSW	33	
SESE, SWSE, SESW, SWSW		33		

Results of the area of review calculations are shown in Table 4. The area of review is based on the larger of the radius of a pure waste cylinder, the radius of the cone of influence, or the minimum radius (Ch13, Sec5(b)(iv)).

C. Groundwater Classification

The groundwater in the Fort Union Formation aquifer system within the mine permit boundary (LQD TFN 4 6/268) and with upper and lower boundaries defined by the discharge zones in Table 1 is classified as Class VI according to Wyoming Department of Environmental Quality (WDEQ), WQRR, Chapter 8. This classification was made for the following reason(s):

- The depth and location make use of the water economically and technologically impractical (WQRR Chapter 8, Section 4.d.ix.C).

D. Authorized Operations

Well Design – Injection shall be conducted through tubing which has been secured by a packer within 500 feet of the top of the receiver aquifer (Ch13, Sec9(d)(xxv)) and which has been isolated from the long string casing by a fluid-filled annulus.

Injection Rates - Each well is allowed a maximum instantaneous injection rate shown in Table 6 provided that the surface pressure limitations are not exceeded. The permittee shall set an alarm to detect increases in the injection rate above the maximum permitted instantaneous rate and shall immediately cease injection when the alarm is triggered; or shall install a kill switch to prevent injection at above the permitted rate.

Table 4. Area of Review

	LC DW No. 1	LC DW No. 2 (proposed)	LC DW No. 3 (proposed)	LC DW No. 4 (proposed)	LC DW No. 5 (proposed)
Radius of Pure Waste Cylinder (ft)	400	400	400	400	400
Radius of Cone of Influence (ft)	8,700 (9,200)*	11,400 (12,550)*	11,650 (12,100)*	12,100 (13,500)*	12,600 (14,200)*
Minimum Radius of Area of Review (ft)	1,320	1,320	1,320	1,320	1,320

*Radius calculated with Theis equation and well function (exponential integral) rather than log approximation.

Permitted Wastes - Wastes to be injected are described as follows:

Liquid waste generated by uranium mining using in-situ leaching at the Lost Creek Project including operation bleed streams, yellowcake wash water, sand filter and ion-exchange wash water, on-site laboratory waste water, reverse osmosis brine, groundwater restoration and groundwater sweep solutions, plant washdown water, wash waters used in cleaning or servicing the waste disposal system equipment, and stormwater.

Fluids produced during the drilling, completion, testing, or stimulation of wells or test holes related to mining operations at the Lost Creek Project; or during the workover or abandonment of any such well; and drilling equipment wash water.

North American Industry Classification System (NAICS) – 212291

The radionuclide-bearing waste produced at this facility by in-situ uranium mining has been defined by the Atomic Energy Act as Section 11e.(2) byproduct material and is regulated by the Nuclear Regulatory Commission (NRC) under Title 10 Code of Federal Regulations Part 40. It is not “solid waste” according to Title 40 Code of Federal Regulations Part 261.4(a)4 and is consequently not hazardous waste. Because Wyoming is a “non-agreement” state, the NRC retains jurisdiction over in-situ mining wastes and the permittee shall not use the injection wells for waste disposal without the proper NRC license.

The expected concentration ranges for selected chemical species are listed in Table 7.

Table 5. Water Quality of the Discharge

	Units	Median	Maximum	Minimum
Calcium	mg/L	unknown	1,000	200
Sodium	mg/L	unknown	3,000	150
Potassium	mg/L	unknown	1,000	10
Bicarbonate	mg/L	unknown	4,000	1,500
Carbonate	mg/L	unknown	500	0
Sulfate	mg/L	unknown	2,000	80
Chloride	mg/L	unknown	4,000	200
Ammonia (as N)	mg/L	unknown	500	50
pH	s.u.	unknown	9	6
Total Dissolved Solids (TDS)	mg/L	unknown	15,000	4,000
Uranium (as U ₃ O ₈)	mg/L	unknown	15	1
²²⁶ Radium	pCi/L	unknown	3,000	300

Permission to discharge other non-hazardous waste may be authorized through a minor permit modification (Ch13, Sec8(d)(v)). Additional monitoring may be required for additional waste types.

Permitted Corrosion Inhibitors, Anti-Scalants, and Biocides - Corrosion inhibitors, anti-scalants, and biocides may be added to the waste stream with the prior written approval of the Administrator.

Injection Pressure - The injection pressure in each injection well shall be limited to the fracture pressure of the receiver except as necessary during well stimulation approved by the Administrator (Ch13, Sec9(d)(ii)). Temporary limits are listed for each well in Table 6. The temporary limit applies until recalculation of the parameters in Table 6 following completion of a step-rate test. Exceeding the limiting surface injection pressure (LSIP) in Table 6 or creating or propagating fractures within the receiver or confining zone once waste disposal has commenced are violations of this permit and shall be reported pursuant to Section K of this permit. A high-pressure kill switch shall be installed on the injection tubing and set to preclude violations of injection pressure limits.

For each well, the permittee shall conduct a step-rate injection test within one year of permit issuance or well completion (i.e., casing cemented and perforated), whichever comes later, to determine the actual fracture pressure of the receiver (Ch13, Sec9(d)(ii)). Such tests shall be conducted using both surface and downhole gauges or transducers. The downhole device shall be placed within one hundred vertical feet of the packer. For a conclusive result, at least three of the injection rate steps below the fracture threshold will be colinear. Upon completion of the test, the permittee shall recalculate the maximum surface injection pressure (MSIP) and LSIP.

If the recalculated LSIP is greater than the temporary LSIP in Table 6, the permittee must obtain the approval of the Administrator before operating the well at a pressure above the temporary LSIP. If the new LSIP is less than the temporary LSIP in Table 6, the permittee must cease injection and not restart discharge until the wellhead pressure can be maintained below the recalculated LSIP. The permittee may conduct additional step-rate injection tests, at its discretion, to refine estimates of MSIP as injection continues.

Step-rate data, analyses, and interpretations may be included in the well completion report or submitted separately to the Administrator within one month of completion of the test or with the next quarterly report, whichever is later.

Annulus Pressure – The annulus between the injection tubing and the long string casing shall be filled with a corrosion-inhibiting fluid and be monitored and maintained in a way that allows reliable leak detection. The annulus pressure shall be maintained within the limits set in Table 6. During periods of continuous injection, the annulus pressure should be reasonably constant but large variations in pressure are allowed during startup and shutdown. The permittee shall set alarms to detect increases or decreases in annulus pressure that could indicate loss of mechanical integrity and shall immediately cease injection and shut the well in when an alarm is triggered; or the permittee shall install a kill switch to stop injection if the casing, tubing, packer, or well head leak. Settings for low- and high-pressure alarms shall take into account annulus pressure changes due to variations in temperature of the annulus fluid.

Table 6. Maximum Injection Rates, Annulus Pressures, and Maximum and Limiting Surface Injection Pressures (MSIP, LSIP)

	LC DW No. 1	LC DW No. 2 (proposed)	LC DW No. 3 (proposed)	LC DW No. 4 (proposed)	LC DW No. 5 (proposed)
Maximum Injection Rate (bbl/day)	1,714.3	1,714.3	1,714.3	1,714.3	1,714.3
Maximum Annulus Pressure (psig)	800	800	800	800	800
Minimum Annulus Pressure (psig)	200	200	200	200	200
Fracture Gradient, F_r (psi/ft)	0.50	0.50	0.50	0.50	0.50
Depth to Top of Perforations, D_p (ft)	6,139	6,300	6,400	6,500	6,650
Temperature in Well* (°F)	102	98	99	100	101
TDS of Injectate (mg/L)	15,000	15,000	15,000	15,000	15,000
Density of Injectate, ρ_i (g/cm ³)	1.0131	1.0132	1.0132	1.0132	1.0132
Injectate Fluid Gradient (psi/ft)	0.4392	0.4393	0.4392	0.4392	0.4392
$grad_j = \rho_j \cdot 12 \frac{in}{ft} \cdot 16.387 \frac{cm^3}{in^3} / 453.592 \frac{g}{lb}$					
$MSIP = (D_p \cdot F_r) - (D_p \cdot grad_j)$ (psig)	373	383	389	395	404
$LSIP = 0.9 \cdot MSIP$ (psig)	336	344	350	355	364

*Average of the injectate (assumed to be 50° F) and formation temperatures.

New Well Construction - The permittee shall obtain written acceptance of financial assurance from WDEQ prior to completion of LC DW No. 1 and prior to construction of each of the other wells. The well(s) covered by this permit shall be cased and cemented so as to prevent movement of fluid from the well(s) or borehole(s) into any underground source of drinking water (USDW) (Ch13, Sec11(a)). All well materials shall be compatible with the wastes that may be contacted (Ch13, Sec11(b)) and the casing and cement shall be designed for the life expectancy of the well (Ch13, Sec11(c)).

Any well stimulation activities require prior approval of the Administrator.

The packer at the bottom of the tubing shall be set within 500 feet of the top of the authorized discharge zone (Table 1) for each well and within a zone of good quality cement bond as shown by a cement bond log (Ch13, Sec9(d)(xxv)).

Injection into a well may not begin until:

1. Well construction is complete (Ch13, Sec9(d)(xxix)); and
2. The permittee has submitted a well completion and testing report and the "Notification of Completion of Construction of Injection Well" (available on the WQD - UIC Program web site - <http://deq.state.wy.us/wqd/groundwater/uicprogram/index.asp>) for a newly constructed or modified well; and
3. The permittee has provided the Administrator with sufficient notice to allow for inspection of the well (Ch13, Sec9(d)(xxiv)); and
4. Mechanical integrity of the well and cement bonding of the long string casing have been proven or demonstrated to the satisfaction of the Administrator; and
5. The permittee has demonstrated financial assurance (Ch13, Sec17(a)).
6. The permittee has received written approval from the Administrator to begin injection.

E. Prohibitions

This permit does not allow for the injection of any hazardous waste as defined in 40 CFR 261.3 or in Wyoming Solid Waste Management Rules and Regulations, Chapter 2. Injection of any substance defined as a hazardous waste, whether hazardous by listing or by characteristic is a violation of this permit.

No person shall conduct any authorized injection activity in a manner that results in a violation of any permit condition or representations made in the application (Ch13, Sec18(b)(i)).

No person shall conduct any authorized injection activity in a manner that results in a movement of fluids out of the receiver (Ch13, Sec18(b)(ii)).

No zone or interval other than the discharge zone shall be used as a receiver for the discharge (Ch13, Sec18(b)(ii)(A)).

No uncased hole may be used as a conduit for the discharge, excepting that portion of a hole in the discharge zone (Ch13, Sec18(b)(ii)(B)).

No annular space between the wall of the hole and casing in the hole may be used as a conduit for discharge, excepting in that portion of a hole in the discharge zone (Ch13, Sec18(b)(ii)(C)). The annular space may receive fluids used in cementing casing during the cementing process.

No person shall construct, install, modify, or improve an authorized injection facility except in compliance with this permit (Ch13, Sec18(b)(iii)).

F. Operation and Maintenance

Each injection well shall be constructed, operated, and maintained to prevent movement of fluid from the well into any USDW (Ch13, Sec11(a)).

The permittee shall operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes mechanical integrity of the well, effective performance, adequate funding, operator staffing and training, and laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit (Ch13, Sec9(d)(vi)).

The permittee is required to operate the facility in accordance with statements, representations and procedures presented in the complete permit application and supporting documents as accepted and approved by the Administrator. If such procedures conflict with those in this permit, the conditions in this permit shall take precedence (Ch13, Sec18(b)(i)).

Measuring and recording devices shall be tested and calibrated at a frequency sufficient to ensure accurate and precise measurements. A record of the date of the most recent calibration or maintenance shall be retained at the well site.

G. Entry and Inspection

The permittee shall allow the Administrator, or an authorized representative of the Administrator (upon presentation of credentials and during normal working hours) to enter the premises where a regulated facility is located, or where records are kept under the conditions of this permit; to inspect and photograph the discharge and related facilities and equipment; to review and copy reports and records required by this permit; to collect fluid samples for analysis; to measure and record pressures and water levels; to observe and record data from monitoring equipment; and to perform any other function authorized by law or regulation (Ch13, Sec9(d)(xii)).

Inspectors shall not be required by the permittee to sign any waiver of liability.

H. Environmental Monitoring Program for Groundwaters of the State

The permittee shall furnish the Administrator any information necessary to establish a monitoring program if requested to do so (Ch13, Sec9(d)(xiii)).

No groundwater monitoring program under this permit, other than that described in Section I, is required because of the reduction in risk of pollution due to the depth and confinement of the receiver aquifers (Ch13, Sec13(a)(ii)).

I. Monitoring Requirements

1. The permittee shall retain records of all monitoring information (Ch13, Sec9(d)(xiv)) including all calibration and maintenance records and all original chart recordings for a period of three years after closure of the facility (Ch13, Sec15(g)), at which time the permittee shall notify the Administrator and either deliver the records to the Water Quality Division (WQD) or discard them as directed by the Administrator.
2. Records of monitoring information shall include:
 - a. The date, exact place, and time of sampling or measurements;
 - b. The name(s) of individual(s) who performed the sampling or measurements;
 - c. The types of sample containers used, methods of preservation, and holding times;
 - d. The date(s) analyses were performed;
 - e. The name(s) of individual(s) who performed the analyses;
 - f. The analytical techniques or methods used;
 - g. The results and precision of such analyses.

Operational Monitoring (Ch13, Sec13(b)(ii)):

Injection Pressure - The permittee shall monitor the injection pressure continuously and record the readings on a strip chart recorder, a circular chart recorder, or electronically (Ch13, Sec13(i)).

Injection Rate and Volume - The permittee shall monitor the injection rate and volume continuously and record both on a strip chart recorder, circular chart recorder, or electronically (Ch13, Sec13(i)).

Annulus Pressure - The permittee shall continuously monitor the pressure of the casing - tubing annulus and record the pressures on a strip chart recorder, a circular chart recorder, or electronically (Ch13, Sec13(i)).

Discharge Zone Reservoir Pressure, Reservoir Boundaries or Anomalies, Hydraulic Conductivity, and Skin Factor - The permittee shall shut-in each well covered by this permit annually for a period of time long enough to observe a valid pressure fall-off curve (Ch13, Sec13(e)). For the first test, the minimum duration of injection and fall-off shall be calculated according to the equations on page A-4 of the "UIC Pressure Falloff Testing Guideline" (USEPA Region 6, August 2002), or the equivalent equations in subsequent editions. Durations for subsequent tests shall be longer than wellbore storage and skin effects and sufficient for accurate estimates of aquifer permeability. Tests shall be analyzed by the permittee using commonly accepted methods to obtain hydraulic conductivity or permeability, transmissivity, and skin factor and to identify reservoir boundaries (including flow in fractures) and other anomalies such as partial penetration or layering. The test method chosen should be justified by a review of relevant assumptions and actual well and aquifer conditions. Along with the analysis and interpretation, the permittee shall submit plots of injection rate, pressure, and the pressure derivative versus time on appropriate graphs. If the method used differs from previous methods used for the same well, the analyst should discuss the comparability of the results.

Digital data, results, analyses, and interpretations for the fall-off test shall be submitted to the Administrator within one month or with the next quarterly report after the test is done, whichever is later (Ch13, Sec15(f)). These data shall include pressures starting with the introduction of the pressure-measuring device into the well (or for at least one hour prior to test start for a permanently installed downhole device); and injection rates starting at least twice the fall-off period before the start of the fall-off test.

Radius of Influence - The results of each pressure fall-off test shall be used to update the radius of influence calculation for each discharge zone. These updates shall account for historical injection and remaining project life. The permittee shall provide a map showing the updated radius of influence and all wells which penetrate the confining zone within the old and new radii of influence.

If the updated radius of influence for any discharge zone expands to encompass wells not previously identified as within the area of review, construction and plugging and abandonment records for those wells shall be submitted to the Administrator. For those wells which the Administrator determines to be inadequately completed or plugged or which lack sufficient supporting information, the permittee shall submit a corrective action plan to prevent movement of fluid into any USDW through those wells. Upon approval by the Administrator, this plan shall be incorporated as a permit requirement.

Physical and Chemical Properties of the Injectate - The permittee shall monitor the quality of the injectate quarterly (Ch13, Sec15(c)(v)), when significant process changes occur, or when operating changes may significantly alter the waste stream (Ch13, Sec13(h)). The samples must be representative of the waste as it enters the wells. If all the wells receive waste from the same pipe exiting the uranium processing plant, samples may be collected from that pipe rather than from individual wells. Table 7 lists the analytes and parameters to be analyzed quarterly. WQD may approve alternate methods to those listed in Table 7 upon receipt of a written request describing the procedures, precision, and accuracy of the proposed method and a comparison of the proposed method with that in Table 7.

The first five parameters in Table 7 shall be measured weekly at the mine site and averaged mathematically for the quarter. Samples for uranium and radium analysis shall be collected weekly and physically composited for the quarter and then analyzed once per quarter at a lab certified by USEPA for radionuclide analysis.

Table 7. Analyte and Parameter List for Quarterly Analyses of Injectate

EPA Analytical Method	Analyte or Parameter	CAS Number
SM2550 B	Temperature	None
120.1	Specific Conductance	None
SM4500-H ⁺ B	pH	None
	Specific Gravity	None
SM2540	Total Dissolved Solids	None
200.7 or 200.8	Uranium	7440-61-1
903.0	²²⁶ Radium	13982-63-3

Note: Methods preceded by "SM" are standard methods.

Limiting Concentrations of Injectate - Upper control limits for this permit are listed in Table 8. pH has both upper and lower control limits and concentrations must remain within the range indicated in Table 8. Exceedances of these values are a violation of this permit and require notification under Section K of this permit.

Table 8. Control Limits for Injected Waste

Analyte or Parameter	Upper Control Limit
pH	6.0 > pH < 10 s.u.

J. Sampling and Test Procedures

The following units are to be used where applicable: pounds (mass) per square inch for pressure with gage or absolute pressure noted (psig or psia); standard oil field barrels (bbl, equivalent to 42 gallons) for fluid volume; standard oil field barrels per day (bbl/day) for fluid flow rates; milligrams per liter (mg/L) for analyte concentrations other than pH in standard log units or radium, radioactive strontium isotopes, and gross alpha particle radioactivity in picoCuries per liter (pCi/L). The permittee may report equivalent quantities in other units in addition to those above.

Procedures and methods for sample collection and analyses shall be implemented by the permittee to ensure that the samples are representative of the groundwater, water, or wastes being sampled (Ch13, Sec14(a)).

A trip blank of distilled water shall be collected for each quarterly sampling date and a duplicate sample shall be collected at least once per year. Blank and duplicate results and chain-of-custody forms shall be included in the quarterly reports.

Procedures for mechanical integrity tests are described in Section M.

Procedures for pressure fall-off tests are described under Operational Monitoring in Section I.

Procedures for step-rate injection tests are described under Injection Pressure in Section D.

K. Records and Reports

1. Record Retention - The permittee shall retain copies of all reports required by this permit, and records of all data used to complete the application for this permit until the permit expires. As described in Section I.2, monitoring records shall be retained for three years after well closure (Ch13, Sec15(g)).
2. Electronic Data Deliverable (EDD) Reporting - The permittee shall use EDD reporting if required by the Administrator.
3. Compliance Schedule Reports - If a compliance schedule is required by the Administrator, reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any such schedule shall be submitted no later than thirty days following each schedule date (Ch13, Sec9(d)(xx)).
4. Noncompliance Event Reports - See Section S.
5. Other Noncompliance Reports - The permittee shall report all instances of noncompliance not reported otherwise, and submit the information listed for the written report in Section S with the next quarterly report (Ch13, Sec9(d)(xxii)).
6. Quarterly Reports - Quarterly reports shall be submitted to the Administrator no later than 30 days after the end of each calendar quarter (Ch13, Sec15(a) and 15(c)). The mailing address is: UIC Program Supervisor, DEQ - Water Quality Division, 122 W. 25th St. - 4W, Cheyenne, WY 82002. The quarterly results shall also be submitted online at <http://gem.trihydro.com> within 30 days of the end of quarter. The written quarterly report shall include the following information:
 - a. The minimum, average, and maximum instantaneous injection rates for each well for each month of the quarter. The page showing the maximum injection rates shall also show the maximum permitted injection rate for comparison.
 - b. The minimum, average, and maximum daily injection pressures for each well for each month of the quarter (Ch13, Sec15(c)(i)). The table or graph showing the maximum injection pressures shall also show the maximum permitted injection pressure for comparison and the pressures at which any alarms or kill switches are activated.
 - c. The total injection volume in barrels for each well for each month of the quarter, the total for the quarter, and the total cumulative volume of waste injected to date (Ch13, Sec15(c)(iv)).

- d. The maximum and minimum annulus pressures for each well for each month of the quarter. The table or graph showing the annulus pressures shall also show the pressures at which any alarms or kill switches are activated.
 - e. Any quarterly analytical results required by Section I of this permit (Ch13, Sec15(c)(v)).
 - f. Any permit exceedances within the quarter.
 - g. Any events that triggered alarms or shutdowns and the responses taken during the quarter shall be fully described (Ch13, Sec15(c)(iii)).
 - h. Any well tests conducted more than thirty days before the end of the quarter (e.g., mechanical integrity, pressure fall-off, or step-rate injection) (Ch13, Sec15(f)) and reports of well workovers (Ch13, Sec(c)(vi)). See also item K.8.
7. Annual Reports - Annual reports shall be submitted to the Administrator at the same address as the quarterly reports. They are due no later than thirty days after the end of each calendar year (Ch13, Sec15((c)). The annual report for each well shall include the following information in addition to that required for the quarterly report:
- a. A graphical representation of the injection pressures and volumes for the previous five year's operation and a digital file (e.g., .csv, .txt., .xls, .xlsx) containing these data. The graph shall have calendar dates as the abscissa and pressure and volume as the ordinates.
 - b. Graphical representations of the quality of the injected waste over time and a digital file (e.g., .csv, .txt., .xls, .xlsx) containing these data. The graphs shall show the injectate quality for the previous five year's operation and shall be prepared on scales appropriate to the variation observed.
8. Well Tests - Reports of well tests conducted less than thirty days before the end of a calendar quarter shall be submitted within thirty days of test completion (Ch13, Sec15(f)).
9. Reports for Aborted Operations - A comprehensive report for any aborted or curtailed operation, which results in the complete termination of discharge or associated activity, shall be submitted to the Administrator within thirty (30) days of termination in lieu of an annual report (Ch13, Sec15(d)).
10. Reports of Plugging and Abandonment - A report of plugging and abandonment (Section N) shall be submitted as soon as practicable after a well is plugged (Ch13, Sec9(d)(xxvii)).

11. Well Completion Report – A report of well construction, completion, and testing and “Notification of Completion of Construction of Injection Well” shall be submitted prior to injection into a new or modified well (see New Well Construction in Section D).

L. Permit Conditions

This permit is issued for a period of ten years (Ch13, Sec9(a)). If the permittee wishes to continue injection after the expiration date of this permit, he should apply to the Administrator at least four months prior to the expiration date of this permit (Ch13, Sec9(d)(iii)).

It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit (Ch13, Sec9(d)(iv)).

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation.

The filing of a request by the permittee, or at the instigation of the Administrator, for permit modification, revocation, or termination, or the notification of planned changes or anticipated noncompliance shall not stay any condition of this permit (Ch13, Sec9(d)(ix)).

After notice and opportunity for a hearing, the Administrator may modify or revoke a permit, in whole or in part, during its term for cause. Causes include, but are not limited to, the following:

1. Noncompliance with terms or conditions of this permit (Ch13, Sec8(e)(i));
2. Failure in the application or during the issuance process to disclose fully all relevant facts, or misrepresenting any relevant facts at any time (Ch13, Sec8(e)(ii)); or
3. Failure of the casing, cement, or the confining layer; or
4. A determination that the activity endangers human health or the environment and can only be regulated to acceptable levels by a permit modification or termination (Ch13, Sec8(e)(iii)).

Permits will be automatically terminated after closure and release of financial responsibility by the Administrator (Ch13, Sec8(i)).

This permit will be reviewed by WQD at least once every five (5) years, and may be reviewed more frequently (Ch13, Sec9(b)). Permits that do not satisfy the review criteria are subject to modification, revocation and reissuance, or termination (Ch13, Sec9(c)).

The conditions in this permit supersede any application content (Ch13, Sec18(b)(i)).

M. Mechanical Integrity

Mechanical integrity shall be maintained continuously and tested at intervals of no longer than five years. The test used to determine mechanical integrity shall be a two part test approved by the Administrator (Ch13, Sec9(d)(vii)). The two parts shall be conducted no more than three months apart unless prior approval is obtained from the Administrator.

Part I of the mechanical integrity test shall demonstrate the absence of leaks through the packer, tubing, casing, and wellhead (Ch13, Sec9(d)(vii)(A)). Prior to the commencement of waste injection and at intervals of no longer than five years thereafter, and more frequently if required by the Administrator, the casing - tubing annulus of each well shall be pressure tested such that the surface annulus pressure is at least 100 psi greater than the maximum historical injection pressure, which may be less than the LSIP (Table 6), and that the annulus pressure at the packer is at least 20 psi greater than the tubing pressure at the packer. A pressure change of less than 10% after thirty minutes shall be considered successful. A continuous record of the injection pressure during the test on a chart or at intervals of one minute or less, the specific gravities of the annulus and tubing fluids, and the injection pressure at the time of the test shall be submitted to the Administrator along with the other test results.

Part II of the mechanical integrity test shall demonstrate the absence of fluid movement behind the casing (Ch13, Sec9(d)(vii)(B)) above the topmost perforation. Prior to the commencement of waste injection and at intervals of no longer than five years thereafter, and more frequently if required by the Administrator, each well shall be logged using a radioactive tracer survey or oxygen activation log and a temperature survey. The static temperature log shall start more than two hours, and preferably more than 24 hours, after injection has ceased. The results and their interpretation shall be submitted to the Administrator along with the next quarterly report.

Other types of logs may be substituted for Part II of the mechanical integrity test if they satisfy Chapter 13. Section 9. (d) (vii) and are approved by the Administrator.

WQD shall be notified at least 30 days prior to a mechanical integrity test.

In the case of a failed mechanical integrity test in a well that has begun waste disposal, the well shall be immediately shut-in (Ch13, Sec9(d)(viii)). The Administrator shall be notified by telephone at (307) 777-7781 within twenty-four hours of the test and a written report shall be submitted within seven days. Injection shall not resume until the well has been repaired, a complete mechanical integrity test has been passed, and written permission to resume operation has been obtained from the Administrator.

If at any time injection occurs in any zone not within the discharge zone, a permit violation has occurred. The operator shall prepare an estimate of the volume and quality of all wastewaters which were injected outside of the discharge zone. In the case where any aquifer meeting the standards for Class I through IVA under Wyoming Water Quality Rules and Regulations, Chapter 8, has been contaminated due to out of zone injection, the operator shall prepare and implement a plan to recover these solutions. Injection shall not resume until the well

has been repaired, a complete mechanical integrity test has been passed, and written permission to resume operation has been obtained from the Administrator.

N. Plugging and Abandonment

Any well under this permit shall be plugged and abandoned within six months after:

- Permit expiration (unless application for a new permit has been made and has not been denied by the Administrator);
- Final cessation of injection activities; or
- The permittee has removed equipment required for the proper operation and monitoring of the well (except for temporary removal during well maintenance).

The permittee shall notify the Administrator of plans to convert or abandon a well at least 90 days prior to the start of any conversion or abandonment activity (Ch13, Sec9(d)(xxvi)). The permittee shall follow the plugging and abandonment procedure described in the application or subsequently prescribed by the Administrator. The procedure shall include well plugging, abandonment, surface reclamation and seeding of the well site, closure of related surge ponds, and removing or purging and plugging of any underground piping. In no case shall the procedure be less stringent than that required by USEPA for Class I non-hazardous waste disposal wells at the time of abandonment (e.g., Title 40 Code of Federal Regulations Part 146.10)

As soon as practicable after plugging and abandonment of any well covered by this permit, the permittee shall submit a plugging and abandonment report describing all activities and detailing any deviations from the original plan (Ch13, Sec9(d)(xxvii)).

O. Duties of the Permittee

Duty to Comply - The permittee shall comply with all conditions of this permit (Ch13, Sec9(d)(i)), all rules and regulations of the Department of Environmental Quality, and all applicable state and federal laws. Nothing in this permit relieves the permittee of any duties under applicable regulations.

Duty to Mitigate - The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit (Ch13, Sec9(d)(v)).

Duty to Give Notice of Changes - The permittee shall give advance notice to the Administrator as soon as possible of any planned physical alteration or additions, other than authorized operation and maintenance, to the permitted facility and receive authorization prior to implementing the proposed alteration or addition (Ch13, Sec9(d)(xvi)).

Duty to Warn of Noncompliance - The permittee shall give advance notice to the Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements (Ch13, Sec9(d)(xvii)).

Duty to Provide Information for Permit Modification - The permittee shall furnish the Administrator within a reasonable time, any information which the Administrator may request to

determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit(Ch13, Sec9(d)(xi)).

Duty to Provide Records – The permittee shall furnish the Administrator, upon request, copies of records required to be kept by this permit (Ch13, Sec9(d)(xi)).

Duty to Amend Permit - Any modification that will result in a violation of any permit condition shall be reported to the Administrator through the submission of a new or amended permit application and shall not be implemented until a new or modified permit has been issued (Ch13, Sec9(d)(xvii)).

Duty to Correct - The permittee shall report all instances where it becomes aware that it failed to submit any relevant facts in the permit application, or where it submitted incorrect information in a permit application or in any report to the Administrator, and shall promptly submit such facts or information (Ch13, Sec9(d)(xxiii)).

Duty to Monitor - Monitoring results shall be obtained and reported at the intervals specified elsewhere in this permit (Ch13, Sec9(d)(xix)).

Duty to Test - Test results shall be obtained and reported at the intervals specified elsewhere in this permit.

Duty to Provide Current Contact Information – The permittee shall report any changes to physical or mailing address, phone, or email, and any changes of the personnel responsible for complying with this permit to WQD within one month of the change.

P. Financial Responsibility

The permittee is required to maintain financial assurance, in a form approved by the Administrator, to close, plug, and abandon the injection well operation and to reclaim the surface facilities in a manner approved by the Administrator (Ch13, Sec17(a)).

The obligation to maintain financial responsibility survives the termination of the permit or the cessation of injection (Ch13, Sec17(c)).

If the institution issuing the financial instrument files for bankruptcy or loses its authority to issue financial instruments, the permittee shall notify the Administrator within two weeks and obtain other financial assurance within two months. If the permittee is named as debtor in any voluntary or involuntary bankruptcy proceeding, it must notify the Administrator within two weeks.

A minimum of \$306,270 for plugging and abandonment of injection wells LC DW No. 1, LC DW No. 2, and LC DW No. 3 shall be included in the bond for reclamation and restoration of the Lost Creek ISR Project uranium facilities under Permit to Mine TFN 4-6/268. This bond or replacement financial instrument shall be maintained as long as any of the wells is covered under this permit. Work on any of these wells may not begin until the Administrator of the Land Quality Division has accepted the financial instrument provided by Lost Creek ISR, LLC.

Construction of LC DW No. 4 or LC DW No. 5 may not begin until an appropriate financial instrument has been obtained by the permittee and accepted by the Administrator.

Q. Special Permit Conditions

In addition to the conditions required of all permits, the Administrator may establish specific conditions so as to prevent the migration of fluids into USDWs (Ch13, Sec9(e)). The following conditions are established for this permit:

- Due to the presence of faults with surface expression within the project area, the permittee shall collect water quality samples, using a method approved by the Administrator, above and below the confining zone at the base of the Wasatch Formation in each new well to demonstrate the integrity of the confining zone. The number of ~~samples, depths, and analytes shall be chosen by the permittee so as to produce a~~ statistically significant result. The Administrator may waive the sampling requirement on a well-by-well basis. The water quality results, analyses, and interpretations shall be submitted to the Administrator no later than the well completion and testing report required for new wells in Section D.
- If the sampling above demonstrates there may be leakage through the confining zone, the permittee shall submit a revised well construction plan with deeper perforations to be approved by the Administrator prior to well completion.

The following conditions are adopted to comply with the Governor's Executive Order 2008-2 on Greater Sage-Grouse Core Area Protection:

- No construction activities related to the Class I wells may begin until Lost Creek ISR has obtained a permit to mine from the Land Quality Division.
- All activities and habitat disturbances related to the Class I wells shall be covered by the relevant stipulations to protect sage grouse habitat in the permit to mine.
- Any conditions in the permit to mine regarding the Great Basin spadefoot toad shall become conditions of this permit to the extent they are applicable to the construction and operation of the Class I wells.

R. Signatories Requirement

All reports filed in conjunction with this permit shall contain the following certification (Ch13, Sec9(d)(xv)):

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment." (Form UIC-1-I Rev 3/93)

All reports required by this permit and other requested information shall be signed by a responsible officer as described in WQRR Chapter 13, Section 5(b)(xiv));

or

By a duly authorized representative. A person is a duly authorized representative only if:

1. The authorization is made in writing by one of the prescribed principals;
2. The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility or activity; and
3. The written authorization is submitted to the Administrator.

If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the Administrator prior to, or together with, any reports or information to be signed by the new authorized representative.

S. Noncompliance

Any permit noncompliance constitutes a violation of WQRR Chapter 13 and is grounds for enforcement action, permit termination, revocation, or modification. Confirmed noncompliance resulting in a migration of injected fluid outside the discharge zone shall be reported to the Administrator at (307) 777-7781 within twenty-four (24) hours from the time the permittee becomes aware of the circumstances and a written report shall be provided within five days (Ch13, Sec9(d)(xxi)).

The oral report should include:

- a. Any monitoring or other information which indicates that any contaminant may cause an endangerment to a useable groundwater of the state.
- b. Any noncompliance with a permit condition or malfunction of the discharge (injection) system which may cause fluid migration into or between useable groundwaters of the state.

The written report should include:

- a. A description of the noncompliance and its cause;
- b. The period of noncompliance, including exact dates and times;
- c. If the noncompliance has not been corrected, the anticipated time it is expected to continue; and
- d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance (Ch13, Sec9(d)(xxi)).

T. Permit Transfer

Any transfer of this permit shall be accomplished by the submission of the proper forms for permit transfer to the Administrator. Transfer of this permit must first be approved by the Administrator and no transfer shall be approved unless the proposed permittee agrees to correct any and all noncompliance issues (Ch13, Sec9(d)(xviii) and Ch13, Sec8(k)).

~~This permit automatically terminates upon completion of a permit transfer (Ch13, Sec8(j)).~~

The permittee is alone responsible for the operation of the facility covered by this permit. Operation of this facility by another entity is a violation of this permit unless a transfer of this permit has first been accomplished.

U. Property Rights

This permit does not convey any property rights or any exclusive privileges. This permit does not authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations (Ch13, Sec9(d)(x)).

The state of Wyoming recently passed Wyoming statute §34-1-152 and amended Wyoming statute §34-1-202 regarding the ownership of pore space within the subsurface. WDEQ recommends that permittees consider how these laws may apply to their injection of material into the subsurface.

V. Severability

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

Abbreviations:

USDW – underground source of drinking water (Classes I, II, III, IV(a), Special(A))

USEPA – United States Environmental Protection Agency

WDEQ – Wyoming Department of Environmental Quality

WQD – Water Quality Division of WDEQ

WQRR – WDEQ Water Quality Rules and Regulations



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

May 28, 2010

Wayne Heili
Lost Creek ISR, LLC
5880 Enterprise Drive, #200
Casper, WY 82609

RE: Lost Creek ISR, LLC – Lost Creek Project
Final Permit UIC **09-586**, Class I Non-hazardous
Sweetwater County, Wyoming

Dear Mr. Heili:

The Class I permit for your disposal facility is attached.

The underground injection control program was promulgated to prevent serious problems caused by direct discharges to the groundwater. Those problems included groundwater pollution leading to contamination in domestic water wells and serious health affects caused by exposures to toxic substances and water borne pathogens. Your cooperation with our program is sincerely appreciated.

If you have any questions please do not hesitate to contact John Passehl at (307) 777-5623 or by internet at jpasse@wyo.gov.

Sincerely,

George D. Langstaff
UIC Program, Water Quality Division

GDL/rm/10-0450

Enclosure: Permit

cc: Hal Demuth, Petrotek Engineering Corporation, 10288 West Chatfield Avenue, Suite 201
Littleton, CO 80127
John Passehl, WDEQ
WDEQ UIC file

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

March 30, 2010

Lost Creek ISR, LLC
Wayne Heili, President
5880 Enterprise Drive, #200
Casper, WY 82609

RE: **09-586**, Lost Creek Project
Class I underground injection control application, Sweetwater County

Dear Mr. Heili:

To facilitate preparation of the final permit for the Class I injection wells of the Lost Creek Disposal Wellfield, please provide additional details about the on-site laboratory whose waste will be included in the well discharge (p. 28 of application). What activities will be conducted in the laboratory? What reagents and solvents will be used in the laboratory?

Will the laboratory generate any of the following wastes?

- Carbon tetrachloride, chlorinated fluorocarbons, chlorobenzene, methylene chloride, orthodichlorobenzene, tetrachloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, trichlorofluoromethane, or 1,1,2-trichloro-1,2,2-trifluoroethane as spent halogenated solvents; or
- Acetone, benzene, carbon disulfide, cresols and cresylic acid, cyclohexanone, ethyl acetate, ethyl benzene, ethyl ether, 2-ethoxyethanol, isobutanol, methanol, methyl ethyl ketone, methyl isobutyl ketone, n-butyl alcohol, nitrobenzene, 2-nitropropane, pyridine, toluene, or xylene as spent non-halogenated solvents; or
- Waste containing polychlorinated biphenols or 1,2-dichlorobenzene.

Thank you for your prompt response.

Sincerely,

George D. Langstaff
UIC Program, Water Quality Division

GDL/rm/10-0249

cc: Kevin Frederick, Ground Water Protection and UIC, WDEQ
WDEQ UIC file

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

February 25, 2010

Wendy Cheung
USEPA, Region VIII
1595 Wynkoop Street
Denver, Colorado 80202-1129

RE: Lost Creek ISR, UIC Class I application **09-586**
Sweetwater County, Wyoming

Dear Ms. Cheung:

In accordance with the Memorandum of Agreement between the Wyoming Department of Environmental Quality (WDEQ) and the United States Environmental Protection Agency (USEPA), the purpose of this letter is to inform USEPA that WDEQ has determined that the application from Lost Creek ISR, LLC, to construct and operate five Class I injection wells for the Lost Creek in-situ leach uranium mine is complete. The application material is available for USEPA review on the GEM web site (<https://gem.trihydro.com>). The injected waste will consist of liquid wastes generated by the extraction of uranium from fluids injected into uranium-bearing aquifers and by liquid wastes generated during groundwater restoration of the leached aquifer.

The receiver for all wells is interpreted by Lost Creek ISR as the Fort Union Formation. A test well drilled in 2008 will be completed as an injection well with the injection interval between 7,000 and 9,600 feet below the kelly bushing (approximately 19 feet above the ground surface). Proposed injection intervals for the other four wells are 6,100-8,200 feet below the kelly bushing.

Eighteen water samples were collected from aquifers in the upper and middle Fort Union Formation at various depths in the test well by through-casing, in-bore-hole, and jetting methods. Of the 12 samples that were analyzed for total dissolved solids (TDS), the two that are most likely to be representative of Fort Union water based on cation/anion balance, calculated/measured TDS, pH, and low potassium (used in drilling fluid) had total dissolved solids (TDS) concentrations of 11,300 (BH1-T4) and 10,900 (BH2-T2) mg/L. Another apparently reliable sample (7060A) had a TDS concentration of 9,310 mg/L but the sample collection was interrupted by a power outage. The other nine TDS results are greater than 10,000 mg/L. Geophysical logs indicate that TDS concentrations in the Fort Union Formation are consistently greater than 10,000 mg/L except in a few isolated sandstones and coals where salinity calculations are not considered reliable due to indications of natural gas.

The aquifer system proposed for injection is not being used as a source of drinking water or for anything else. The mine is in an uninhabited part of the Great Divide Basin about 14.5 miles from the community of Bairoil (estimated 2007 population of 97) and 39 miles northwest of Rawlins (estimated 2007 population of 8,700). There are no permitted water wells within the mine permit area. Within 1 mile of the mine boundary, there are 2 stock-watering wells with depths less than 300 feet, a stock-watering well 900 feet deep, and a fourth well of unknown depth that is apparently not permitted.

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---



WDEQ proposes to classify waters within the injection intervals for the individual wells as Class VI because using these waters for drinking water would be economically impractical (Water Quality Rules and Regulations, Chapter 8. Section 4.d.ix.C). According to the State Engineers Office water well database, the deepest municipal well in the state of Wyoming has a depth of 4,500 feet and only four other municipal wells are deeper than 4,000 feet. Some wells with "miscellaneous" use are probably used for drinking water, such as Casper Country Club's 5,100 feet deep well, but the great majority of miscellaneous wells deeper than 4,000 feet were drilled by oil producers to be used in water flood operations or are petroleum exploration wells converted to other uses. Consequently, it is unlikely that any community would fund a distant 6,500 feet deep water well in the Lost Creek project area. Wells completed in the shallower Battle Spring Formation would likely have higher yields (for similar construction), better water quality, and lower pumping costs in any case. Moreover, there would be no reason for a distant community to develop a water supply in the Lost Creek project area because aquifers north of the Wind River thrust 2-5 miles north of the Lost Creek project are present at shallower depths closer to their recharge areas. Except for patented land at the Sweetwater uranium mill site southwest of the Lost Creek project area, all the land is under federal or state ownership so it is unlikely there would ever be a need for domestic water wells in the area. More intensive livestock use of the area is limited by the arid climate, the low productivity of native vegetation, and by wild horse conservation issues. Recent designation of the northern part of the Great Divide Basin, including the Lost Creek project area, as core sage grouse habitat provides further constraints on development and water use in the area.

WDEQ anticipates completing a draft permit for the Lost Creek ISR injection wells and releasing the draft for public comment by the middle of March. Copies of the draft permit, public notice and a summary of any comments received will be forwarded to USEPA as they are developed. This finding of completeness is being communicated to USEPA prior to completion of the draft permit so that the end of USEPA's 45-day interim response period will nearly coincide with the end of the 30-day minimum public comment period. Please review the application and send your interim response to the return address above. Thank you.

Sincerely,



George D. Langstaff
UIC Program, Water Quality Division

GDL/rm/10-0155

cc: Wayne Heili, Lost Creek ISR, LLC, 5880 Enterprise Drive # 200, Casper, WY 82609
Hal Demuth, Petrotek Engineering Corporation, 10288 West Chatfield Ave., Ste 201, Littleton, CO 80127
Don McKenzie, Administrator, Land Quality Division, WDEQ
Kevin Frederick, Ground Water Section Manager, WDEQ
WDEQ UIC file

STATE OF WYOMING
DEPARTMENT OF ENVIRONMENTAL QUALITY
UNDERGROUND INJECTION CONTROL PERMIT ISSUED UNDER
WYOMING WATER QUALITY RULES AND REGULATIONS
CHAPTER 16

CLASS V INJECTION WELL

() New
(X) Modified (Renewal)

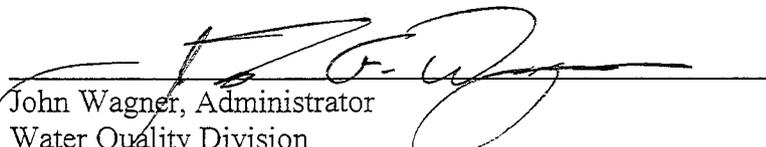
Permit Number **09-587**
Previous Permits 91-332, 92-181, & 96-049
Facility Number WYS-037-041

In compliance with the Wyoming Environmental Quality act (W.S. 35-11-101 through 1104, specifically 301(a)(i) through 301 (a)(iv), Laws 1973, Ch. 250, Section 1) and Wyoming Water Quality Rules and Regulations, Chapter 16.

Applicant: Union Pacific Railroad
Attn: Gary Honeyman
221 Hodgeman
Laramie, WY 82072
(402) 233-1007

Union Pacific Railroad, hereafter referred to as the permittee, is authorized to operate the aquifer remediation system in the NE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 22, Township 18 North, Range 107 West, of the 6th Principal Meridian, Sweetwater County, according to the procedures and conditions of application **09-587** and requirements and other conditions of this permit.

This permit shall become effective on date of issuance.


John Wagner, Administrator
Water Quality Division
Herschler Building, 122 West 25th Street
Cheyenne, WY 82002
(307)-777-7781

2/8/10
Date


John V. Corra, Director
Department of Environmental Quality
Herschler Building, 122 West 25th Street
Cheyenne, WY 82002

2/10/10
Date

ADN/rm/10-0099

Table of Contents

A.	Discharge Zone.....	3
B.	Well and Area of Review	3
C.	Groundwater Classification	3
D.	Authorized Operations.....	3
E.	Hazardous Waste	3
F.	Proper Operation and Maintenance	4
G.	Entry and Inspection.....	4
H.	Environmental Monitoring Program for Groundwaters of the State	4
I.	Requirements for Monitoring the Discharge	6
J.	Test Procedures.....	6
K.	Records and Reports.....	6
L.	Permit Actions	7
M.	Abandonment.....	7
N.	Duties of the Permittee	8
O.	Signatories Requirement.....	8
P.	Noncompliance	9
Q.	Permit Transfer	9
R.	Property Rights	10
S.	Severability	10

A. Discharge Zone

The injection facility is a 175 foot long infiltration trench that accepts treated groundwater from an oil/water separator. The permittee is authorized to inject 72,000 gallons per day (1,714 barrels per day) into the trench and the local alluvial aquifer. The shallowest groundwater is approximately 5 feet below ground surface.

B. Well and Area of Review

The injection trench authorized by this permit is located as follows:

NE¼ of the NW¼ of Section 22, Township 18 North, Range 107 West, 6th Principal Meridian

The Area of Review is defined as a circular area of 360 acres with the injection facility located near its center.

The Area of Review is based upon the following assumptions:

Table 1 (Area of Review Inputs)

Description	Inputs	Units
Permit Duration	10	Years
Porosity	35	Percent
Maximum Injection Rate	72,000	GPD
Thickness of Receiver	30	Feet
Area of Review	360	Acres
Hydraulic Conductivity	2.0	Feet/Day

C. Groundwater Classification

The groundwater in the unnamed alluvial aquifer above the Tertiary Wilkins Peak member of the Green River Formation is classified as Class VI according to Wyoming Water Quality Rules and Regulations, Chapter 8. This classification is made because the groundwater in the area of injection is contaminated with weathered diesel and oil and is therefore not usable.

D. Authorized Operations

The permittee is authorized to inject 72,000 gallons/day maximum, of wastewater into the existing injection well system. The wastewater is described as treated groundwater from an oil/water separator. The permittee is authorized to inject at no more than atmospheric pressure.

E. Hazardous Waste

This permit does not allow for the injection of any hazardous waste as defined in 40 CFR 261.3 and in Wyoming Solid Waste Management Rules and Regulations, Chapter 2. Injection of any substance defined as a hazardous waste, whether hazardous by listing or by characteristic is a violation of this permit.

F. Proper Operation and Maintenance

The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit. The permittee shall operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes: effective performance, adequate funding, operator staffing and training, and laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit. The injection wells covered by this permit shall meet all construction requirements outlined in Wyoming Water Quality Rules and Regulations, Chapter 11 and Chapter 16.

The permittee is required to operate in accordance with statements, representations and procedures presented in the complete permit application and supporting documents as accepted and approved by the Administrator. Any modifications which will result in a violation of permit conditions shall be reported by submission of a new or amended permit application and shall not be implemented until a new or modified permit has been issued. Injection into a well may not begin until construction is complete and the permit is approved.

G. Entry and Inspection

The permittee shall allow the Administrator (upon presentation of credentials and during normal working hours) to enter the premises where a regulated facility is located, or where records are kept under the conditions of this permit and inspect and photograph the discharge and related facilities, review and copy reports and records required by this permit, collect fluid samples for analysis, measure and record water levels, and perform any other function authorized by law or regulation.

H. Environmental Monitoring Program for Groundwaters of the State

General Requirements:

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
2. The permittee shall retain records of all monitoring information including all calibration and maintenance records, copies of the reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample measurement, report, or application. This period may be extended by request of the Administrator at any time.
3. The permittee shall use electronic data deliverable (EDD) reporting when required by the Administrator.
4. Records of monitoring information shall include:

- a. The date, exact place, and time of sampling or measurements;
 - b. The initials or name(s) of the individual(s) who performed the sampling or measurements;
 - c. The date(s) analyses were performed;
 - d. The time(s) analyses were initiated;
 - e. The initials or name(s) of the individual(s) who performed the analyses;
 - f. References and written procedures for the analytical techniques or methods used;
 - g. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.
5. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.
 6. The permittee shall retain all records concerning the nature and composition of injected fluids until five (5) years after completion of any specified plugging and abandonment procedures. The administrator may require the owner/operator to deliver the records to the administrator at the conclusion of the retention period.
 7. The permittee shall report any noncompliance which may endanger health or the environment within 24 hours from the time the operator becomes aware of the circumstances. The report should include:
 - a. Any monitoring or other information which indicates that any contaminant may cause an endangerment to a usable groundwater of the state;
 - b. Any noncompliance with a permit condition or malfunction of the discharge (injection) system which may cause fluid migration into or between usable ground waters of the state;
 - c. A written submission shall be provided within 5 days of the time the operator becomes aware of the circumstances. This written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
 8. The permittee shall report all instances of noncompliance not reported otherwise, at the time monitoring reports are submitted.
 9. The monitoring reports shall be submitted on forms provided by the Department. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 45 days following each schedule date.

I. Requirements for Monitoring the Discharge

The wastewater prior to injection shall be sampled and the following parameters analyzed according to the schedule identified in **Table 2**. The following parameters shall be analyzed quarterly by the listed methods and reported annually:

Table 2 (Semi-Annual Groundwater Sampling Schedule)

WELL NAME OR NUMBER	SAMPLING SCHEDULE	PARAMETER ANALYZED	ANALYTICAL METHOD	PERMIT LIMIT or UCL
Infiltration Trench	Quarterly	Total Petroleum Hydrocarbons (TPH)	EPA Method SW-846 8015B.	100.0 mg/L
		2-Methylnaphthalene	EPA Method SW-846 8270C	0.20 mg/L

*All applicable chemical concentrations in this permit are expressed as total (not dissolved) in mg/l unless otherwise noted.

All annual reports are to be reported within forty-five (45) days of the last day of the year. Sampling periods are identified as follows: 01/01-03/31, 4/01-6/30, 07/01-9/30, and 10/01-12/31.

The above upper control limit (UCL) cannot be exceeded in any sample. Exceedance of this value is a violation of this permit and shall require notification under Section K of this permit. Failure to perform and report analyses in accordance with the prescribed schedule and method is also a violation of this permit.

J. Test Procedures

All samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. All samples taken shall include a trip blank of distilled water for each sampling date and a duplicate sample at least once per year. All required analyses shall be conducted in compliance with Wyoming Water Quality Rules and Regulations, Chapter 8, Section 7.

K. Records and Reports

The permittee shall furnish to the Administrator within a specified time any information which the Administrator may request relating to the operation of the facility, including copies of records required to be kept by this permit. The permittee shall retain copies of all records and reports required by this permit for a period of three (3) years following permanent well abandonment. After that time, those records shall be delivered to the Administrator for disposal or archive at his discretion. Confirmed noncompliance resulting in the migration of injected fluid into any zone outside the permitted receiver shall be reported to the Administrator within twenty-four (24) hours, and a written submission (via certified mail) shall be provided within five (5) days of the time the permittee becomes aware of the excursion. The written submission

shall contain: a description of the noncompliance; the period of noncompliance, including exact dates and times, and if the noncompliance has not been controlled, the anticipated time it is expected to continue; and a list of the steps taken or planned to reduce, eliminate, and prevent the recurrence of the noncompliance. Confirmed noncompliance not already reported under this section shall be reported at the time monitoring reports are submitted. The reports shall contain the same information as required by the paragraph above. The permittee shall notify the Administrator thirty (30) days in advance of any planned alteration, conversion, or abandonment of the well covered by this permit.

L. Permit Actions

This permit is authorized for a period of ten (10) years. If the permittee wishes to continue injection after the expiration date of this permit he shall apply to the Administrator and obtain a new permit. The application should be submitted at least 180 days before the expiration date of this permit. Under this permit, the Department may consider injection after the expiration date a violation of the permit.

It shall not be a defense for the permittee in an enforcement action that it would be necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. The filing of a request by the permittee, or at the instigation of the Administrator, for permit modification, revocation, termination, or notification of planned changes or anticipated noncompliance shall not stay any condition of this permit.

After notice and opportunity for a hearing, a permit may be modified, suspended or revoked in whole or part during its term for cause which includes, but is not limited to any of the following:

1. Violation of this permit; or
2. Obtaining a permit by misrepresentation of facts in the application.

This permit will be reviewed at least once every five (5) years, and may be reviewed more frequently. A permit may be modified at any time as may be required, including for conformity with changes in regulations or standards which occur after the permit was issued. A permit may be modified in whole or part in order to apply more or less stringent standards; or prohibitions for toxic or other substances present in the permittees discharge as may be ordered by the Environmental Quality Council.

M. Abandonment

General Requirements:

1. The permittee shall notify the administrator at least thirty (30) days prior to abandonment of the facility.
2. An abandonment report, detailing the compliance with abandonment procedures outlined in the original application for coverage under this permit, or describing any deviations from the

original plan, shall be submitted as soon as practicable after abandonment. The abandonment shall include reclamation of the well site.

3. Injection wells covered by this permit shall be abandoned in accordance with Wyoming Water Quality Rules and Regulations, Chapter 16, Section 12.

N. Duties of the Permittee

The permittee shall give advance notice to the Administrator as soon as possible of any planned physical alteration or additions, other than authorized operation and maintenance, to the permitted facility and receive authorization prior to implementing the proposed alteration or addition. The permittee shall furnish the Administrator within a reasonable time any information which the Administrator may request to determine whether cause exists for modifying, revoking, or reissuing, or terminating this permit, or to determine compliance with this permit; and to furnish to the Administrator upon request, copies of records required to be kept by this permit. Any modification which may result in a violation of a permit condition shall be reported to the Administrator, and any modification that will result in a violation of any permit conditions shall be reported to the Administrator through the submission of a new or amended permit application. The permittee shall report all instances where he becomes aware that he failed to submit any relevant facts in the permit application, or where he submitted incorrect information in a permit application or in any report to the Administrator, and shall promptly submit such facts or information.

If any cultural materials are discovered during construction, work in the area should halt immediately. The Administrator and the Wyoming State Historic Preservation Office shall be contacted (777-7697) and the materials shall be evaluated by an archaeologist or historian meeting the Secretary of the Interior's Professional Qualification Standards (48 FR 22716, Sept. 1983).

O. Signatories Requirement

All reports filed in conjunction with this permit shall contain the following certification:

"I certify, under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

All reports required by this permit and other requested information shall be signed as follows:

For a corporation – by a principal executive officer of at least the level of vice-president;

For a partnership or sole proprietorship – by a general partner or the proprietor, respectively;

For a municipality, state, federal, or other public agency – by either a principal executive officer or ranking elected official; or

By a duly authorized representative for any of the above. A person is a duly authorized representative only if:

1. The authorization is made in writing by one of the prescribed principals;
2. The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility or activity; and
3. The written authorization is submitted to the Administrator.

If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the Administrator prior to or together with any reports or information, to be signed by the new authorized representative.

P. Noncompliance

The permittee shall comply with all conditions of the permit. Any permit noncompliance constitutes a violation of Wyoming Water Quality Rules and Regulations, Chapter 16 and is grounds for enforcement action, permit termination, revocation, or modification. Conformed noncompliance resulting in an excursion shall be reported to the Administrator orally within twenty-four (24) hours, and a written submission shall be provided within five (5) days of the time the permittee becomes aware of the excursion. The written report shall contain the sections specified in Section K of this permit. Any permit noncompliance constitutes a violation of this permit.

The filing of any request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

Q. Permit Transfer

Any transfer of this permit shall be accomplished by the submission of the proper forms for permit transfer to the Administrator. Transfer of this permit must first be approved by the Administrator and the Director. No transfer shall be approved unless the proposed permittee agrees to bring any and all noncompliance issues into compliance with this permit. The permittee is alone responsible for the operation of the facility covered by this permit. Sale of the facility and subsequent operation of this facility by another is a violation of this permit unless a transfer of this permit has first been accomplished.

R. Property Rights

This permit does not convey any property rights of any sort or any exclusive privilege. This permit does not authorize injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

S. Severability

Nothing in this permit shall be construed to preclude the institution of any legal action or to relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation.

STATEMENT OF BASIS FOR A UIC PERMIT

I. General information.

- A. UIC Permit Number: **09-587**
- B. Facilities Covered: Green River Rail Yard Groundwater Remediation Injection Trench
- C. Class of Facility: Class V (Wyoming Water Quality Rules and Regulations, Chapter 16)

II. Application reviewed for compliance with the following regulations. (Indicate yes or no for each section)

- | | | | |
|---------------|-----|---------------|-----|
| A. Chapter 8 | Yes | D. Chapter 12 | No |
| B. Chapter 9 | No | E. Chapter 13 | No |
| C. Chapter 11 | No | F. Chapter 16 | Yes |

III. Basis for issuing permit (Indicate yes or no for each section).

- A. Review of application package indicates proposed facility will be in compliance with applicable regulations identified in Section II.

Yes

- B. Permit based on deviation from applicable regulations in accordance with approved policy statement.

No

IV. Facilities not specifically covered by regulations. (Indicate the section number of the regulations and briefly summarize the regulation).

Not Applicable

V. Application requires review to determine groundwater impacts in accordance with Wyoming Water Quality Rules and Regulations, Chapter 3, Section 17. Note that sediment ponds, public water supplies, sewerage systems, and small wastewater systems are exempt from the requirements of Section 17. (Indicate either applicable or not applicable. If not applicable delete all of section VI from the Statement of Basis).

Applicable. A groundwater review has been conducted to insure that no groundwater will be impacted by this system.

VI. Documentation of Statement of Basis.

- A. The archive file for this permit will include adequate documentation of all sections of this Statement of Basis.

VII. Applicant and Public Participation

- A. The applicant has been provided with a draft permit prior to the permit being issued.
- B. A Public Notice has been issued with a public notice period starting December 22, 2009 and ending on January 21, 2010 (30 day notice as required by Wyoming Water Quality Rules and Regulations, Chapter 16). This notice was published in the Green River Star on or before the start of the public comment period.

CERTIFICATION

The issuance of this permit is based upon a review of the application package submitted in accordance with the requirements of Wyoming Water Quality Rules and Regulations, Chapter 16, Section 6. This review was performed by Adrienne D. Nunn, Project Engineer, completed on November 2, 2009. Permit issuance is recommended based upon statements, representations, and procedures presented in the permit application and supporting documents, permit conditions, and the items identified in this "Statement of Basis".

REVIEW OF PLANS AND SPECIFICATIONS
WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
Herschler Bldg., 4 West
Cheyenne, Wyoming 82002

PROJECT: Cheyenne River Rest Area, Wyoming DOT
– One Time Land Application of Sewage Lagoon Liquids

LOCATION: Section 26, T39N, R71W, **Converse County**

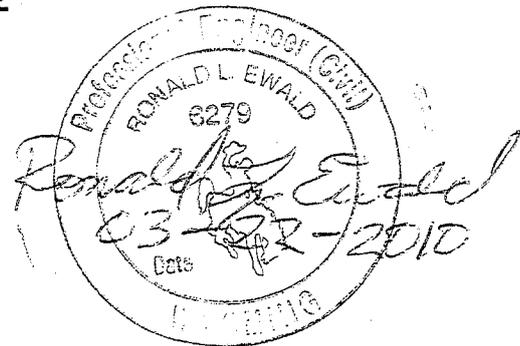
ENGINEER: None Listed

APPLICANT: Wyoming Department of Transportation
Attn: Larry Lijewski, Facility Coordinator
900 Bryan Stock Trail
Casper, Wyoming 82601
Ph: (307) 473-3214

WATER QUALITY DIVISION REFERENCE #: 09-588

REVIEWING ENGINEER: Ronald L. Ewald
Phone: (307) 777-6183

DATE OF REVIEW: March 22, 2010



ACTION: NOT AUTHORIZED FOR CONSTRUCTION. In accordance with Section 14 (a), Chapter III, Wyoming Water Quality Rules and Regulations, the application is denied because it is incomplete or does not meet applicable minimum design and construction standards. Please address the comments outlined below and submit the requested information in order that the application process may be completed in accordance with Section 9. If the applicant fails to provide the requested information within six months the incomplete application shall be returned.

COMMENTS, INADEQUACIES, AND QUESTIONS:

1. Need a More Detailed Application Package - the application package shall consist of an Engineering Design Report (EDR), and a set of engineering plans and drawings. The EDR should contain any calculations used to design the project, a narrative describing the general layout and character of the site, any steps involved in carrying out the project, and estimates of loading rates and application schedules. The engineering plans and drawings should show in plan or profile or cross-section view (whichever ones work best) to provide technical details of such components as:
 - a. The wastewater intake or withdrawal structure/apparatus, where it is located, and how it will operate, etc.
 - b. The pump(size &hp), the hose and/or pipe assembly and connections, diameter and material, and length.
 - c. Details of the end of hose/pipe outlet. Is there some kind of controllable nozzle or just the open end of a hose or pipe?
2. Need a Detailed to scale Contour Map of the Proposed Application Area - the proposed tree line land application area needs more detail and description. What is the length and width of this area? What is the surface condition, such as bare ground, prairie grass, sage brush, etc.? What is the relative location and density of the trees within the application area? Are there fences, with signage and warning language? Where is the nearest public space(distance and direction), and what is it's purpose?
3. Estimated Volume of Water to be Removed from Lagoons - a calculated estimate of the amount of water that is intended to be removed and therefore land applied, needs to be made. Also, after this amount of water is removed what will the resulting final lagoon depth and freeboard height be?
4. Discharge Application - how will the discharge of the effluent be spread over the entire tree lined area? Will a long length of perforated pipe be laid down, or will the end of the hose just be moved around from time to time? How will the total application rate (gallons per square foot or whatever) and evenness of application be monitored?
5. Sampling - sampling of the effluent make-up and "strength" shall be monitored before, during, and at the end of the land application. Using lagoon water quality test results previously submitted, the total volume to be applied, and the total area available, the loading rates for Nitrogen and Fecal Coliform shall be calculated before starting the land application to confirm that the soil loading rates are within reason. Assuming that the soil loading rates will be OK, take a verification sample of the effluent at the end of the hose after it has began to discharge for a few minutes. The discharge "Quality" should remain within the following limits throughout the process:

- Nitrogen, Nitrate + Nitrite as "N": < 10 mg/L
- Fecal Coliform(10x Dilution): Between 2.2 & 200 CFU/100ml.

If the initial sample is "OK", the land application can commence. During application a sample should be collected at least once every week and tested. If any of these samples are outside of the acceptable range, immediately stop the land application and notify the DEQ/WQD. Take one last sample as the land application is coming to an end and test it.

6. Final Report - please outline what you would propose to put in a final report to the DEQ/ Water Quality Division, and how long after the completion of the land application you could deliver the report.
7. Wyoming Licensed Professional Engineer(PE) Required to Sign & Seal the Plans and Engineering Design Report(EDR) - the plans and EDR(calculations and narrative description of the process) shall be signed and sealed by a Wyoming PE.

End of Review

RLE/rm/10-0227

STATE OF WYOMING
DEPARTMENT OF ENVIRONMENTAL QUALITY
UNDERGROUND INJECTION CONTROL PERMIT ISSUED UNDER
WYOMING WATER QUALITY RULES AND REGULATIONS
CHAPTER 16

CLASS V INJECTION WELL

(X) New
() Modified

Permit Number **09-589**
Previous Permits N/A
Facility Number WYS-023-00113

In compliance with the Wyoming Environmental Quality act (W.S. 35-11-101 through 1104, specifically 301(a)(i) through 301 (a)(iv), Laws 1973, Ch. 250, Section 1) and Wyoming Water Quality Rules and Regulations, Chapter 16.

Applicant: Lincoln County School District No. 2
Attn: Steve Rich, Maintenance Director
222 E. 4th Avenue/PO Box 219
Afton, WY 83110
(307) 885-3811

Lincoln County School District No. 2, hereafter referred to as the permittee, is authorized to operate the industrial process water and waste disposal facility in the NE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 24, Township 32 North, Range 119 West, of the 6th Principal Meridian, Lincoln County, according to the procedures and conditions of application 09-589 and requirements and other conditions of this permit.

This permit shall become effective on date of issuance.


John Wagner, Administrator
Water Quality Division
Herschler Building, 122 West 25th Street
Cheyenne, WY 82002
(307)-777-7781

3/15/10
Date


John V. Corra, Director
Department of Environmental Quality
Herschler Building, 122 West 25th Street
Cheyenne, WY 82002

3/15/10
Date

ADN/rm/10-0213

Table of Contents

A.	Discharge Zone.....	3
B.	Well and Area of Review	3
C.	Groundwater Classification	3
E.	Hazardous Waste	4
F.	Proper Operation and Maintenance	4
G.	Entry and Inspection.....	4
H.	Environmental Monitoring Program for Groundwaters of the State.....	5
I.	Requirements for Monitoring the Groundwater	6
J.	Test Procedures.....	7
K.	Records and Reports	7
L.	Permit Actions	8
M.	Abandonment.....	8
N.	Duties of the Permittee	9
O.	Signatories Requirement.....	9
P.	Noncompliance.....	10
Q.	Permit Transfer	10
R.	Property Rights.....	10
S.	Severability	11

A. Discharge Zone

The injection facility is a leachfield system preceded by a septic tank and oil and grease interceptor. The facility is authorized to inject 300 gallons per day average and 1,200 gallons per day maximum from a bus wash into the alluvium located in Star Valley. The shallowest groundwater is approximately 18 feet below ground surface.

B. Well and Area of Review

The injection well authorized by this permit is located as follows:

NE¼ of the SW¼ of Section 24, Township 32 North, Range 119 West, 6th Principal Meridian

The Area of Review is defined as a circular area of 360 acres with the injection facility located near its center.

The Area of Review is based upon the following assumptions:

Table 1 (Area of Review Inputs)

Description	Inputs	Units
Permit Duration	10	Years
Porosity	25	Percent
Maximum Injection Rate	1,200	GPD
Thickness of Receiver	120	Feet
Area of Review	360	Acres
Hydraulic Conductivity	200	Feet/Day

C. Groundwater Classification

The groundwater in the alluvium is classified as Class I according to Wyoming Water Quality Rules and Regulations, Chapter 8. This classification is made because:

1. The groundwater in this formation is currently being used for domestic purposes at nearby points of withdrawal.
2. Laboratory analysis of the groundwater within the area of review meets the requirements for Class I groundwater in Table 1 of the Wyoming Water Quality Rules and Regulations, Chapter 8.

Groundwater of Class I shall not be degraded to make it unusable as a source of water for this purpose. An aquifer that contains less than 10,000 mg/L total dissolved solids can be considered an underground source of drinking water.

D. Authorized Operations

The permittee is authorized to inject 300 gallons per day average and 1,200 gallons per day maximum, of wastewater into the proposed leachfield injection system. The wastewater is described as industrial process water from washing school buses.

If additional wastewater flows are added beyond those identified in the permit application, the leachfield and/or treatment system may need to be enlarged in which case the permittee must submit a revised application and receive a new permit prior to modification of the leach field or treatment system.

E. Hazardous Waste

This permit does not allow for the injection of any hazardous waste as defined in 40 CFR 261.3 and in Wyoming Solid Waste Management Rules and Regulations, Chapter 2. Injection of any substance defined as a hazardous waste, whether hazardous by listing or by characteristic is a violation of this permit.

F. Proper Operation and Maintenance

The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit. The permittee shall operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes: effective performance, adequate funding, operator staffing and training, and laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit. The injection wells covered by this permit shall meet all construction requirements outlined in Wyoming Water Quality Rules and Regulations, Chapter 11 and Chapter 16.

The permittee is required to operate in accordance with statements, representations and procedures presented in the complete permit application and supporting documents as accepted and approved by the Administrator. Any modifications which will result in a violation of permit conditions shall be reported by submission of a new or amended permit application and shall not be implemented until a new or modified permit has been issued. Injection into a well may not begin until construction is complete and the permit is approved.

G. Entry and Inspection

The permittee shall allow the Administrator (upon presentation of credentials and during normal working hours) to enter the premises where a regulated facility is located, or where records are kept under the conditions of this permit and inspect and photograph the discharge and related facilities, review and copy reports and records required by this permit, collect fluid samples for analysis, measure and record water levels, and perform any other function authorized by law or regulation.

H. Environmental Monitoring Program for Groundwaters of the State

General Requirements:

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
2. The permittee shall retain records of all monitoring information including all calibration and maintenance records, copies of the reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample measurement, report, or application. This period may be extended by request of the Administrator at any time.
3. The permittee shall use electronic data deliverable (EDD) reporting when required by the Administrator.
4. Records of monitoring information shall include:
 - a. The date, exact place, and time of sampling or measurements;
 - b. The initials or name(s) of the individual(s) who performed the sampling or measurements;
 - c. The date(s) analyses were performed;
 - d. The time(s) analyses were initiated;
 - e. The initials or name(s) of the individual(s) who performed the analyses;
 - f. References and written procedures for the analytical techniques or methods used;
 - g. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.
5. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.
6. The permittee shall retain all records concerning the nature and composition of injected fluids until five (5) years after completion of any specified plugging and abandonment procedures. The administrator may require the owner/operator to deliver the records to the administrator at the conclusion of the retention period.
7. The permittee shall report any noncompliance which may endanger health or the environment within 24 hours from the time the operator becomes aware of the circumstances. The report should include:
 - a. Any monitoring or other information which indicates that any contaminant may cause an endangerment to a usable groundwater of the state;
 - b. Any noncompliance with a permit condition or malfunction of the discharge (injection) system which may cause fluid migration into or between usable ground waters of the state;

- c. A written submission shall be provided within 5 days of the time the operator becomes aware of the circumstances. This written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
8. The permittee shall report all instances of noncompliance not reported otherwise, at the time monitoring reports are submitted.
9. The monitoring reports shall be submitted on forms provided by the Department. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 45 days following each schedule date.

I. Requirements for Monitoring the Groundwater

Before injection can begin, the down-gradient monitoring well (MW-1) must be installed and baseline groundwater quality established. Once MW-1 is fully constructed and developed, a one-time baseline groundwater sample will be taken. The baseline sample will be analyzed for parameters outlined in **Table 2**. The results need to be reported within 45 days of the sample being taken.

The groundwater in the receiving formation shall be sampled and the following parameters analyzed according to the schedule identified in **Table 2**. The following parameters shall be analyzed by the listed methods and schedules and reported annually:

Table 2 (Annual Groundwater Monitoring Schedule)

WELL NAME OR NUMBER	SAMPLING SCHEDULE	PARAMETER ANALYZED	ANALYTICAL METHOD	PERMIT LIMIT or UCL
MW-1	Once in the third quarter (7/01 through 9/30) each year	Iron	EPA 200.7, 200.9	0.30 mg/L
		Diesel Range Organics (DRO)	SW8015B	1.10 mg/L
		Total Dissolved Solids (TDS)	EPA 160.1	500 mg/L
		Total Coliform	EPA 1604	0 colonies/100mL
		pH	EPA 150.1	>6.5 and <8.5
		Top of casing elevation (ft)	Casing elevation must be surveyed	Not applicable
		Depth to static water (ft)	Steel tape with chalk or electronic tape	Not applicable
Oil/Grease Interceptor	Monthly	Total Volume Injected	Flow meters	1,200 gpd
Septic Tank		Oil/Grease thickness in tanks	Sludge Judge or similar interceptor oil and solids sampler	1.0 feet oil/grease thickness

*All applicable chemical concentrations in this permit are expressed as total (not dissolved) in mg/l unless otherwise noted. Once one (1) foot of oil and grease thickness is measured in the Oil and Grease Interceptor or the Septic Tank, the tank(s) must be pumped. Include a record of pumping of the tanks in the annual report. Failure to perform and report analyses in accordance with the prescribed schedule and method is a violation of this permit.

All annual reports are to be reported within forty-five (45) days of the last day of the year (February 14th).

The above upper control limit (UCL) cannot be exceeded in any sample. Exceedance of this value is a violation of this permit and shall require notification under Section K of this permit. If the UCL is exceeded in a sample, additional monitoring wells may have to be installed to delineate the contamination and any possible sources.

J. Test Procedures

All samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. All samples taken shall include a trip blank of distilled water for each sampling date and a duplicate sample at least once per year. All required analyses shall be conducted in compliance with Wyoming Water Quality Rules and Regulations, Chapter 8, Section 7.

K. Records and Reports

The permittee shall furnish to the Administrator within a specified time any information which the Administrator may request relating to the operation of the facility, including copies of records required to be kept by this permit. The permittee shall retain copies of all records and reports required by this permit for a period of three (3) years following permanent well abandonment. After that time, those records shall be delivered to the Administrator for disposal or archive at his discretion. Confirmed noncompliance resulting in the migration of injected fluid into any zone outside the permitted receiver shall be reported to the Administrator within twenty-four (24) hours, and a written submission (via certified mail) shall be provided within five (5) days of the time the permittee becomes aware of the excursion. The written submission shall contain: a description of the noncompliance; the period of noncompliance, including exact dates and times, and if the noncompliance has not been controlled, the anticipated time it is expected to continue; and a list of the steps taken or planned to reduce, eliminate, and prevent the recurrence of the noncompliance. Confirmed noncompliance not already reported under this section shall be reported at the time monitoring reports are submitted. The reports shall contain the same information as required by the paragraph above. The permittee shall notify the Administrator thirty (30) days in advance of any planned alteration, conversion, or abandonment of the well covered by this permit.

L. Permit Actions

This permit is authorized for a period of ten (10) years. If the permittee wishes to continue injection after the expiration date of this permit he shall apply to the Administrator and obtain a new permit. The application should be submitted at least 180 days before the expiration date of this permit. Under this permit, the Department may consider injection after the expiration date a violation of the permit.

It shall not be a defense for the permittee in an enforcement action that it would be necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. The filing of a request by the permittee, or at the instigation of the Administrator, for permit modification, revocation, termination, or notification of planned changes or anticipated noncompliance shall not stay any condition of this permit.

After notice and opportunity for a hearing, a permit may be modified, suspended or revoked in whole or part during its term for cause which includes, but is not limited to any of the following:

1. Violation of this permit; or
2. Obtaining a permit by misrepresentation of facts in the application.

This permit will be reviewed at least once every five (5) years, and may be reviewed more frequently. A permit may be modified at any time as may be required, including for conformity with changes in regulations or standards which occur after the permit was issued. A permit may be modified in whole or part in order to apply more or less stringent standards; or prohibitions for toxic or other substances present in the permittees discharge as may be ordered by the Environmental Quality Council.

M. Abandonment

General Requirements:

1. The permittee shall notify the administrator at least thirty (30) days prior to abandonment of the facility.
2. An abandonment report, detailing the compliance with abandonment procedures outlined in the original application for coverage under this permit, or describing any deviations from the original plan, shall be submitted as soon as practicable after abandonment. The abandonment shall include reclamation of the well site.
3. Injection wells covered by this permit shall be abandoned in accordance with Wyoming Water Quality Rules and Regulations, Chapter 16, Section 12.

N. Duties of the Permittee

The permittee shall give advance notice to the Administrator as soon as possible of any planned physical alteration or additions, other than authorized operation and maintenance, to the permitted facility and receive authorization prior to implementing the proposed alternation or addition. The permittee shall furnish the Administrator within a reasonable time any information which the Administrator may request to determine whether cause exists for modifying, revoking, or reissuing, or terminating this permit, or to determine compliance with this permit; and to furnish to the Administrator upon request, copies of records required to be kept by this permit. Any modification which may result in a violation of a permit condition shall be reported to the Administrator, and any modification that will result in a violation of any permit conditions shall be reported to the Administrator through the submission of a new or amended permit application. The permittee shall report all instances where he becomes aware that he failed to submit any relevant facts in the permit application, or where he submitted incorrect information in a permit application or in any report to the Administrator, and shall promptly submit such facts or information.

If any cultural materials are discovered during construction, work in the area should halt immediately. The Administrator and the Wyoming State Historic Preservation Office shall be contacted (777-7697) and the materials shall be evaluated by an archaeologist or historian meeting the Secretary of the Interior’s Professional Qualification Standards (48 FR 22716, Sept. 1983).

O. Signatories Requirement

All reports filed in conjunction with this permit shall contain the following certification:

“I certify, under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

All reports required by this permit and other requested information shall be signed as follows:

For a corporation – by a principal executive officer of at least the level of vice-president;

For a partnership or sole proprietorship – by a general partner or the proprietor, respectively;

For a municipality, state, federal, or other public agency – by either a principal executive officer or ranking elected official; or

By a duly authorized representative for any of the above. A person is a duly authorized representative only if:

1. The authorization is made in writing by one of the prescribed principals;
2. The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility or activity; and
3. The written authorization is submitted to the Administrator.

If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the Administrator prior to or together with any reports or information, to be signed by the new authorized representative.

P. Noncompliance

The permittee shall comply with all conditions of the permit. Any permit noncompliance constitutes a violation of Wyoming Water Quality Rules and Regulations, Chapter 16 and is grounds for enforcement action, permit termination, revocation, or modification. Conformed noncompliance resulting in an excursion shall be reported to the Administrator orally within twenty-four (24) hours, and a written submission shall be provided within five (5) days of the time the permittee becomes aware of the excursion. The written report shall contain the sections specified in Section K of this permit. Any permit noncompliance constitutes a violation of this permit.

The filing of any request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

Q. Permit Transfer

Any transfer of this permit shall be accomplished by the submission of the proper forms for permit transfer to the Administrator. Transfer of this permit must first be approved by the Administrator and the Director. No transfer shall be approved unless the proposed permittee agrees to bring any and all noncompliance issues into compliance with this permit. The permittee is alone responsible for the operation of the facility covered by this permit. Sale of the facility and subsequent operation of this facility by another is a violation of this permit unless a transfer of this permit has first been accomplished.

R. Property Rights

This permit does not convey any property rights of any sort or any exclusive privilege. This permit does not authorize injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

The state of Wyoming recently passed Wyoming statute §34-1-152 and amended Wyoming statute §34-1-202 regarding the ownership of pore space within the subsurface. The department recommends that the permittee considers how these laws may apply to their injection of material into the subsurface.

S. Severability

Nothing in this permit shall be construed to preclude the institution of any legal action or to relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation.

STATEMENT OF BASIS FOR A UIC PERMIT

I. General information.

- A. UIC Permit Number: **09-589**
- B. Facilities Covered: Lincoln County School District No. 2 Bus Wash
- C. Class of Facility: Class V (Wyoming Water Quality Rules and Regulations, Chapter 16)

II. Application reviewed for compliance with the following regulations. (Indicate yes or no for each section)

- | | | | |
|---------------|-----|---------------|-----|
| A. Chapter 8 | Yes | D. Chapter 12 | No |
| B. Chapter 9 | No | E. Chapter 13 | No |
| C. Chapter 11 | Yes | F. Chapter 16 | Yes |

III. Basis for issuing permit (Indicate yes or no for each section).

- A. Review of application package indicates proposed facility will be in compliance with applicable regulations identified in Section II.

Yes

- B. Permit based on deviation from applicable regulations in accordance with approved policy statement.

No

IV. Facilities not specifically covered by regulations. (Indicate the section number of the regulations and briefly summarize the regulation).

Not Applicable

V. Application requires review to determine groundwater impacts in accordance with Wyoming Water Quality Rules and Regulations, Chapter 3, Section 17. Note that sediment ponds, public water supplies, sewerage systems, and small wastewater systems are exempt from the requirements of Section 17. (Indicate either applicable or not applicable. If not applicable delete all of section VI from the Statement of Basis).

Applicable. A groundwater review has been conducted to insure that no groundwater will be impacted by this system.

VI. Documentation of Statement of Basis.

- A. The archives file for this permit will include adequate documentation of all sections of this Statement of Basis.

VII. Applicant and Public Participation

- A. The applicant has been provided with a draft permit prior to the permit being issued.
- B. A Public Notice has been issued with a public notice period starting January 25, 2010 and ending on February 24, 2010 (30 day notice as required by Wyoming Water Quality Rules and Regulations, Chapter 16). This notice was published in the Star Valley Independent on or before the start of the public comment period.

CERTIFICATION

The issuance of this permit is based upon a review of the application package submitted in accordance with the requirements of Wyoming Water Quality Rules and Regulations, Chapter 16, Section 6. This review was performed by Adrienne D. Nunn, Project Engineer, completed on January 20, 2010. Permit issuance is recommended based upon statements, representations, and procedures presented in the permit application and supporting documents, permit conditions, and the items identified in this "Statement of Basis".



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

March 16, 2010

Lincoln County School District No. 2
Attn: Steve Rich
P.O. Box 219
Afton, WY 83110

RE: Lincoln County School District No. 2
Final Permit 09-589, Class V Industrial Process Water Disposal Facility
Lincoln County, Wyoming

Dear Mr. Rich:

Attached please find one copy of the Class V permit for the above referenced facility. This permit requires a one-time Notice of Construction Completion, one-time baseline groundwater sampling, and an annual sampling program. The Notice of Construction Completion form should be submitted 30 days after the facility is constructed. Also, please provide as-built details. Before injection can occur, the one-time baseline groundwater sample must be taken from the installed down gradient monitoring well. The annual sampling report must be submitted within 45 days of the end of each calendar year (February 14). All three forms are enclosed for your convenience.

The permit application, draft permit, final permit, public notice, and report forms are available for review on the GEM website <https://gem.trihydro.com>. The corresponding report forms can be filled out using our on-line webform (Monitor Reports Link), or you may have the lab submit them using EQUIS Electronic Data Deliverable (EDD).

The underground injection control program was promulgated to prevent serious problems caused by direct discharges to the groundwater. Those problems included groundwater pollution leading to contamination in domestic water wells and serious health effects caused by exposures to toxic substances and water borne pathogens. Your cooperation with our program is sincerely appreciated.

Sincerely,

Adrienne D. Nunn
Project Engineer
Water Quality Division

ADN/rm/10-0213

Enclosure: Final Permit, Notice of Construction Completion, Monitoring Report Template

cc: Robert Hood, PE, Sunrise Engineering, PO Box 609, Afton, WY 83110

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---



**UNDERGROUND INJECTION CONTROL
NOTIFICATION OF CONSTRUCTION COMPLETION OF INJECTION WELL**

Operator Name: _____ Permit Number: _____

Facility Name: _____ Facility Number: _____

Well (field) I.D.: _____

In accordance with the Wyoming Department of Environmental Quality/Water Quality Division, Chapter 16, Section 5(c)(i)(U), or Chapter 13, Section 9(d)(xxiv) the permittee must submit notice of completion of construction (of individual injection well(s) or facility) to the administrator and allow for inspection of the facility upon completion of construction, prior to commencing any injection activity.

I hereby certify:

1. Construction of the permitted facility was completed on _____ (DATE) and the facility will be placed in operation on _____ (DATE).
2. The facility was constructed in compliance with all terms and conditions of the permit including the report, plans and specifications, design data or other information submitted in support of the application. (If a Wyoming licensed professional geologist and/or professional engineer was used to develop the application, please have them complete the form below as appropriate.)

Facility Owner (print or type)

Signature of Facility Owner

Date _____

Name of Geologist (print or type)

Signature of Geologist

P.G. No.: _____

Date _____

Name of Engineer (print or type)

Signature of Engineer

P.E. No.: _____

Date _____

Class 5F2: Submit form to:

WDEQ
Attn: Groundwater Program
1866 S. Sheridan Ave
Sheridan, WY 82801

Or

All other UIC permits: Submit
form to :

WDEQ
Attn: UIC Program
Herschler Building 4th West
122 West 25th Street
Cheyenne, WY 82002

Email form (pdf) to:
cbmgroundwater@state.wy.us

STATE OF WYOMING
BASELINE FORMATION GROUNDWATER ANALYSIS
DEPARTMENT OF ENVIRONMENTAL QUALITY
REPORTING FORM FOR CLASS INJECTION WELLS

This form shall accompany the submission of any report, documentation or data required by the UIC permit issued to this facility

Company Name:	Lincoln County School District #2
Contact Person:	STEVEN RICH
Phone Number:	
Company Address:	P.O. Box 219 Afton, WY 83110
Facility Name:	LCSD #2 Bus Garage Wash Water Treatment
Facility Number:	WYS-023-00113
Permit Number:	09-589
Legal Location:	T:32.00 R:119.00 S:24.00

Report Frequency:	One Time
EDD Information:	Report ID = 164508; Facility ID = 13100; Sample ID = 10709

Sample Point:	Well MW-1
Sample Point Type:	Monitoring Well
Formation:	Alluvium

Report Comments:

* All lab results must be reported as TOTAL (not dissolved).

Total Coliform (COLIFORM)							
Sample from flow line.							
Data Type	Sample Date	Sample Value	Permit Limit	Units	Detect Flag	EPA Qualifier	Method Comments
LAB			0	colonies			

Iron, Total (FE)							
Minimum 200 ml sample in a plastic or glass container preserved with 5ml, 50% Nitric Acid or equivalent to a pH of less than 2. Holding time six months.							
Data Type	Sample Date	Sample Value	Permit Limit	Units	Detect Flag	EPA Qualifier	Method Comments
LAB			0	mg/L			

Solids, Total Dissolved (TDS)							
200 ml glass or plastic container, cool to 4 degrees Centigrade, holding time 7 days.							
Data Type	Sample Date	Sample Value	Permit Limit	Units	Detect Flag	EPA Qualifier	Method Comments
LAB			0	mg/L			

TPH DRO (TEH1)							
Data Type	Sample Date	Sample Value	Permit Limit	Units	Detect Flag	EPA Qualifier	Method Comments
LAB			0	mg/L			

pH (pH)							
100 ml sample must be measured on site.							
Data Type	Sample Date	Sample Value	Permit Limit	Units	Comments		

FLD		0	pH
-----	--	---	----

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

STATE OF WYOMING
CLASS V (5C3) ANNUAL MONITORING REPORT
DEPARTMENT OF ENVIRONMENTAL QUALITY
UIC
REPORTING FORM FOR CLASS IV INJECTION WELLS

This form shall accompany the submission of any report, documentation or data required by the UIC permit issued to this facility

Company Name:	Lincoln County School District #2
Contact Person:	STEVEN RICH
Phone Number:	
Company Address:	P.O. Box 219 Afton, WY 83110
Facility Name:	LCSD #2 Bus Garage Wash Water Treatment
Facility Number:	WYS-023-00113
Permit Number:	09-589
Legal Location:	T:32.00 R:119.00 S:24.00

Report Frequency:	Annual
EDD Information:	Report ID = 164510; Facility ID = 13100; Sample ID = 10709

Sample Point:	Well MW-1
Sample Point Type:	Monitoring Well
Formation:	Alluvium

Report Comments:

Total Coliform (COLIFORM)
 Sample from flow line.

Data Type	Sample Period Start	Sample Period End	Sample Date	Sample Value	Permit Limit	Units	Detect Flag	Qualifier	EPA Method	Comments
LAB	1/1/2010	12/31/2010			0	Colonies/100 mL				

Iron, Total (FE)
 Minimum 200 ml sample in a plastic or glass container preserved with 5ml, 50% Nitric Acid or equivalent to a pH of less than 2. Holding time six months.

Data Type	Sample Period Start	Sample Period End	Sample Date	Sample Value	Permit Limit	Units	Detect Flag	Qualifier	EPA Method	Comments
LAB	1/1/2010	12/31/2010			0	mg/L				

Oil & Grease (O_AND_G)
 1000 ml glass container, preserve with 5 ml 50% Hydrochloric Acid to a pH of 2 or less. Holding time 28 days.

Data Type	Sample Period Start	Sample Period End	Sample Date	Sample Value	Permit Limit	Units	Detect Flag	Qualifier	EPA Method	Comments
LAB	1/1/2010	1/31/2010			0	mg/L				
LAB	2/1/2010	2/28/2010			0	mg/L				
LAB	3/1/2010	3/31/2010			0	mg/L				
LAB	4/1/2010	4/30/2010			0	mg/L				
LAB	5/1/2010	5/31/2010			0	mg/L				
LAB	6/1/2010	6/30/2010			0	mg/L				
LAB	7/1/2010	7/31/2010			0	mg/L				
LAB	8/1/2010	8/31/2010			0	mg/L				
LAB	9/1/2010	9/30/2010			0	mg/L				

*Oil & Grease units are thickness (inches or feet)

LAB	10/1/2010	10/31/2010			0	mg/L	
LAB	11/1/2010	11/30/2010			0	mg/L	
LAB	12/1/2010	12/31/2010			0	mg/L	

Solids, Total Dissolved (TDS)

200 ml glass or plastic container, cool to 4 degrees Centigrade, holding time 7 days.

Data Type	Sample Period Start	Sample Period End	Sample Date	Sample Value	Permit Limit	Units	Detect Flag	Qualifier	EPA Method	Comments
LAB	1/1/2010	12/31/2010			0	mg/L				

TPH DRO (TEH1)

Data Type	Sample Period Start	Sample Period End	Sample Date	Sample Value	Permit Limit	Units	Detect Flag	Qualifier	EPA Method	Comments
LAB	1/1/2010	12/31/2010			0	mg/L				

Total Volume Injected for the Wellfield (IVFac-tot-vol)

Data Type	Sample Period Start	Sample Period End	Sample Date	Sample Value	Permit Limit	Units	Comments
FLD	1/1/2010	1/31/2010			0	BBLs	
FLD	2/1/2010	2/28/2010			0	BBLs	
FLD	3/1/2010	3/31/2010			0	BBLs	
FLD	4/1/2010	4/30/2010			0	BBLs	
FLD	5/1/2010	5/31/2010			0	BBLs	
FLD	6/1/2010	6/30/2010			0	BBLs	
FLD	7/1/2010	7/31/2010			0	BBLs	
FLD	8/1/2010	8/31/2010			0	BBLs	
FLD	9/1/2010	9/30/2010			0	BBLs	
FLD	10/1/2010	10/31/2010			0	BBLs	
FLD	11/1/2010	11/30/2010			0	BBLs	
FLD	12/1/2010	12/31/2010			0	BBLs	

* Units may be any volume (gallons, Ft³, barrels, etc) just make sure to indicate them.

pH (pH)

100 ml sample must be measured on site.

Data Type	Sample Period Start	Sample Period End	Sample Date	Sample Value	Permit Limit	Units	Comments
FLD	1/1/2010	12/31/2010			0	pH	

Static Water Depth Measured From the Casing Elevation (SWL_DEPTH)

Data Type	Sample Period Start	Sample Period End	Sample Date	Sample Value	Permit Limit	Units	Comments
FLD	1/1/2010	12/31/2010			0		

Elevation of the Static Water (SWL_ELEV)

Data Type	Sample Period Start	Sample Period End	Sample Date	Sample Value	Permit Limit	Units	Comments
FLD	1/1/2010	12/31/2010			0		

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.



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

November 5, 2009

Lincoln County School District No. 2
Attn: Steve Rich
P.O. Box 219
Afton, WY 83110

RE: UIC 09-589, Industrial Wastewater Injection Facility
Class V injection well application, Lincoln County

Dear Mr. Rich:

Attached are comments developed by the Wyoming Department of Environmental Quality (WDEQ) with respect to the content and adequacy of the Wyoming Water Quality Rules and Regulations, Chapter 16, Class V permit application.

The WDEQ received this application on October 15, 2009 and has until December 14, 2009 to make an initial determination of completeness (60 days). Re-submittal of information by an applicant on an incomplete application will begin a new 60 day review process. Pursuant to Chapter 16, Section 6(h), during any 60 day review period where an application is determined complete, a draft permit for issuance or denial shall be prepared and a public notice provided pursuant to Chapter 16, Section 13.

Please feel free to contact me at (307) 777-6428, anunn@wyo.gov or the address below should you have any questions related to these comments or the application and review process.

Sincerely,

Adrienne Nunn
Project Engineer
Water Quality Division

ADN/rm/9-1013

Attachments: WDEQ Comments

cc: Robert Hood, PE, Sunrise Engineering, PO Box 609, Afton, WY 83110

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---



ENGINEERING REVIEW OF UIC PLANS AND SPECIFICATIONS
WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION

Herschler Bldg., 4 West
Cheyenne, Wyoming 82002

PROJECT: Lincoln County School District No.2 Bus Garage Wash Water UIC- 5C3 Industrial Process
Water and Waste Disposal Facilities

LOCATION: T32N, R119W, Section 24, NE ¼, NE¼, SW ¼ **Lincoln County**

ENGINEER: Robert V. Hood, P.E. #11066
Sunrise Engineering, Inc
PO Box 609
Afton, WY 83110

GEOLOGIST: John Wetstein, P.G. #2473
Wester-Wetstein & Associates, Inc.
PO Box 2202
Laramie, WY 82073

APPLICANT: Lincoln County School District #2
Attn. Steve Rich, Director of Maintenance
PO Box 219
Afton, WY 83110

WATER QUALITY DIVISION REFERENCE NUMBER: UIC 09-589

REVIEWING ENGINEER: Adrienne D. Nunn, E.I.T.
Phone: (307)-777-6428

APPROVING GEOLOGIST: Kevin Frederick P.G.
Phone (307)-777-5985

DATE OF REVIEW: November 4, 2009

REVIEW SUMMARY RECOMMENDATION: NOT APPROVABLE



ENGINEERING REVIEW COMMENTS:

1. Technical Engineering Review Extent: Lincoln County School District Number 2 (LCSD#2) has a bus garage with a wash bay. The facility was built with a treatment and recycling system for the wastewater produced from washing the buses. That system has not worked properly and wastewater is currently stored in a 1,000 gallon oil and water separator. Once the tank reaches capacity, the tank is pumped and disposed of by a septic pumping company.

The proposed facility will utilize the current wash bay, drain, and 1,000 gallon interceptor tank. The wastewater will flow from the interceptor into a 4 inch PVC pipe and then a 1,000 gallon septic tank. Then the wastewater will flow to a pipe and rock leachfield.

2. Isolation Distances: Please provide isolation distances according to Water Quality Rules and Regulations (WQRR) Chapter 11, Section 35 (a) (i), Table 2.
3. Site Suitability: Several of the percolation tests resulted in rate of less than one minute per inch. This high rate of percolation is not suitable for leachfields. Please provide the locations of the percolation tests. Also, 6 inches of soil with a percolation rate of 5 minute per inch or slower must be placed between the leachfield drain rock and the native soil.
4. Interceptor: What will be done with the oil and solid wastes collected in the interceptor? How will these wastes be removed from the tank and how will they be disposed of?
5. Leachfield: What is the size of the stone used in the leachfield? Also, please provide more detail on the distribution piping between the septic tank and the leachfield.

GEOLOGY REVIEW COMMENTS:

1. Water Quality of Injectate: The injectate sample analysis in the application does not provide enough information to determine the risk to groundwater. In addition to the parameters already provided please also analyze the injectate for Total Coliform, Oil & Grease, pH, Zinc (Zn), Lead (Pb), Iron (Fe), Total Petroleum Hydrocarbons – Diesel Range Organics (TPH-DRO), Total Petroleum Hydrocarbons – Gas Range Organics (TPH-GRO), Ammonia (NH₃-N), Sulfate (SO₄), Chloride (Cl), and Total Dissolved Solids (TDS). Please test these parameters in accordance with WQRR Chapter 8, Section 7. Based on the injectate sample results, please provide an analysis of the potential impact to groundwater and the nearby domestic wells.

The Water Quality Division requests that the detergents used to wash the buses are biodegradable/non-toxic.

2. Monitoring Requirements: The applicant has requested that the Water Quality Division (WQD) recommend monitoring requirements. Specific requirements will be recommended once

additional information about the injectate is received. Annual sampling of the injectate will probably be required. Also, the interceptor may need to be pumped and disinfected periodically depending on bacteria concentrations. Bacteria may be a concern because of the current odor problems associated with the treatment/recycling system.

Recommendation: The application is not approvable as submitted and does not meet the minimum requirements of Chapter 11 and 16 Water Quality Rules and Regulations.



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

NOTIFICATION OF COVERAGE

November 19, 2009

Corrected Copy

ARCHIVES

Paul E. Grube, Superintendent
Sweetwater County School No. 1
P.O. Box 1089
Rock Springs, WY 82902

RE: Rock Springs 5-6 Offsite Improvements (title corrected 11/23/09), Rock Springs, Wyoming
09-590, Portion of Section 28, T19N, R105W, City of Rock Springs, Sweetwater County

Dear Mr. Grube:

The above application for coverage under a General Permit to Construct water main modifications consisting of the addition of 1940 linear feet of 12 inch C-900 PVC, 12 linear feet 18 inch C-900 PVC with appurtenances associated with service to a Rock Springs 5-6 school to be constructed in accordance with Chapter 3, Section 7 and Chapter 12, Section 14 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct the facilities in accordance with the general permit and the materials submitted in your application package. Your attention is directed to the mandatory reporting requirements outlined in Part V, Section O of the General Permit. These General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage. The General Permits can be found under the Water Quality Division Water and Wastewater Program, Engineering and Technical Services at:

http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

If you have any questions, please contact me at 307-332-3144.

Sincerely,

Perry Roberson
Project Engineer
Water Quality Division

Mark Baron P.E.
Southwest District Engineer
Water Quality Division

PDF: Cheyenne
Bruce Perryman P.E., AVI,p.c., 2035 Westland Road, Cheyenne, WY 82001

Lander Field Office • 510 Meadowview Drive • Lander, WY 82520 • <http://deq.state.wy.us>

ABANDONED MINES
(307) 332-5085
FAX 332-7726

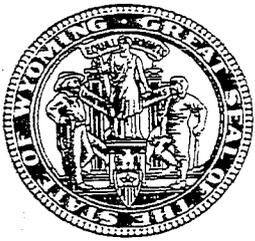
AIR QUALITY
(307) 332-6755
FAX 332-7726

LAND QUALITY
(307) 332-3047
FAX 332-7726

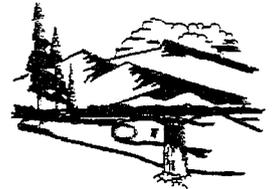
SOLID & HAZARDOUS WASTE
(307) 332-6924
FAX 332-7726

WATER QUALITY
(307) 332-3144
FAX 332-7726





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

NOTIFICATION OF COVERAGE

19 M.B.

November 19, 2009

Paul E. Grube, Superintendent
Sweetwater County School No. 1
P.O. Box 1089
Rock Springs, WY 82902

RE: Rock Springs K-4 Offsite Improvements, Rock Springs, Wyoming 09-590, Portion of Section 28, T19N, R105W, City of Rock Springs, Sweetwater County

Dear Mr. Grube:

The above application for coverage under a General Permit to Construct water main modifications consisting of the addition of 1500 linear feet of 8 inch C-900 PVC, 680 linear feet 12 inch C-900 PVC with appurtenances and sewer main consisting of 1840 feet of 8 inch SDR 35 PVC and appurtenances for service to a new Elementary School in Rock Springs to be constructed in accordance with Chapter 3, Section 7 Chapter 12, Section 14 and Chapter 11 Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct the facilities in accordance with the general permit and the materials submitted in your application package. Your attention is directed to the mandatory reporting requirements outlined in Part V, Section O of the General Permit. These General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage. The General Permits can be found under the Water Quality Division Water and Wastewater Program, Engineering and Technical Services at:

http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

If you have any questions, please contact me at 307-332-3144.

Sincerely,

Perry Roberson
Project Engineer
Water Quality Division

Mark Baron P.E.
Southwest District Engineer
Water Quality Division

PDF: Cheyenne
Bruce Perryman P.E., AVI,p.c., 2035 Westland Road, Cheyenne, WY 82001



PERMIT TRANSFER REQUEST

Date: October 1, 2009

Water Quality Division
Department of Environmental Quality
122 West 25th Street
Herschler Building
Cheyenne, WY 82002

To Whom It May Concern:

Cedar Ridge LLC dba Cedar Ridge Operating Co. LLC intends to transfer ownership of the facility to
(Original Owner)

Stephens Energy Company LLC associated with Permit Number 0 8-2 0 6
(New Owner)

on October 1, 2009 . It is requested that the said permit be transferred to the new owner in
(Date)

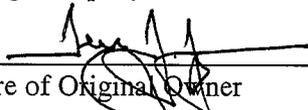
accordance with Section 12 of Chapter 3, Wyoming Water Quality Rules and Regulations. The new owner agrees to accept and be bound by the provisions of the permit and any amendments, agrees to construct and operate the facility in accordance with the approved permit and agrees to accept responsibility for the facility's compliance with applicable standards and permit conditions, including the responsibility to perform any necessary corrective actions.

The original owner shall retain responsibility for the facility according to the terms of the original permit until the application for permit transfer is approved by the Administrator.

Please transfer the permit to the transferee's name and issue a modified permit reflecting the transfer of ownership. Terms and conditions of the original permit are transferred to and become the responsibility of the new owner.

Cedar Ridge LLC dba Cedar Ridge
Operating Company LLC

Stephens Energy Company LLC



Signature of Original Owner



Signature of New Owner

Name Terry L. Logan, Manager

Name Terry L. Logan, Manager

Address 484 Turner Dr., Bldg. B, Suite 3

Address 484 Turner Dr., Bldg. B, Suite 3

Durango, CO 81303

Durango, CO 81303

Telephone (970) 382-5990

Telephone (970) 382-5990

STEPHENS ENERGY COMPANY LLC

October 1, 2009

Don Fischer
North District Geologic Supervisor
Wyoming Department of Environmental Quality
1866 South Sheridan Avenue
Sheridan, WY 82801

Re: Permit to Construct No. 08-206
Authorization of Compliance Monitoring Program, Harris Project

Dear Mr. Fischer,

Enclosed, please find a completed and signed Permit Transfer Request, for the above referenced permit, transferring ownership from Cedar Ridge LLC dba Cedar Ridge Operating Co., LLC to Stephens Energy Company LLC.

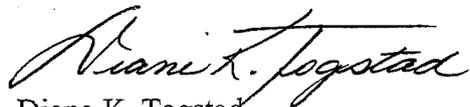
Effective today, October 1, 2009, Cedar Ridge's parent company, Stephens Production Company, has consolidated all of its 100% owned Rocky Mountain area oil and gas companies, which includes Cedar Ridge, into one, currently existing, wholly owned company, 'Stephens Energy Company LLC.'

This consolidation will have little to no impact upon Cedar Ridge's current operations in the Powder River Basin.

Only the company name and email addresses have changed. Our staff, mailing address and phone numbers all remain the same.

If you have any questions or need more information, please do not hesitate to contact me. Thank you.

Sincerely,

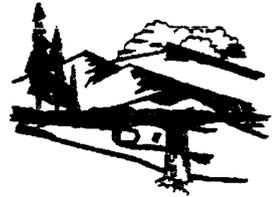


Diane K. Togstad
Office Manager/Production Assistant
Email: dtogstad@SECdurango.com





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

NOTIFICATION OF COVERAGE

October 20, 2009

Stewart Wirth
8416 96th Street NW
Annandale, MN 55302

RE: Red Canyon Ranch Small Residential Wastewater System, Crook County
Location: W SE ¼, Section 4, T54N, R64W; Permit # 09-592

Dear Mr. Wirth:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install, or modify the facility in accordance with general permit and the materials submitted in your application package. The General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage,

http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

Additionally, the following permit condition applies:

1. Cleanouts are required every 100 feet and at all changes in direction 22.5 degrees and greater, both horizontal and vertical. This requirement includes both the pipeline from the house to the septic tank and from the septic tank to the leachfield.
2. Either a 6-inch diameter clean-out riser or a manway from each compartment of the septic tank must be extended to the ground surface from all septic tanks.

Please be advised that Crook County inspects all small wastewater systems permitted through WDEQ. Please contact Crook County Growth and Development at 307.283.4548 to arrange an inspection of the system. **Septic systems shall not be installed during adverse weather. This includes rain, snow, severely cold temperatures, or excessively moist soils.** Please contact me with questions at (307) 777-6941.

Sincerely,

Suzanne Engels
WDEQ/WQD

SE/rm/9-0927

cc: IPS, Cheyenne
WYDEQ Casper File
Tim Lyons, Crook County Growth and Development, P.O. Box 848, Sundance, WY 82729
Randy Gantz, Gantz Backhoe Service, P.O. Box 281, Hulett, WY 82720

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

NOTIFICATION OF COVERAGE

October 26, 2009

John Abbot, Mayor
Town of Meeteetse
P.O. Box 38
Meeteetse, WY 82433

RE: Meeteetse Waterline Project. DEQ Permit #09-593, Lat 44.1581, Long 108.8701

Dear Mayor Abbot,

This project consists of the replacement of existing asbestos concrete and steel waterlines. Approximately 12,120 linear feet of 6-inch and 3312 linear feet of 8-inch C900 PVC pipe will be installed. 2 new fire hydrants and 46 gate valves will be installed as part of the project as well.

The above application for coverage under General Permit has been reviewed in accordance with Chapter 3, Section 7, and Chapter 12, Section 14 of the Wyoming Water Quality Rules and Regulations and is hereby approved.

You are authorized to construct, the facility in accordance with the general permit and the materials submitted in your application package. Your attention is directed to the mandatory reporting requirements outlined in Part V, Section O of the general permit.

These General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage. The General Permits can be found under the Water Quality Division Water and Wastewater Program, Engineering and Technical Services at:

http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

If you have any questions, please contact Hannes Stueckler at 307-335-6964 or James Brough at 307-335-6961.

Sincerely,

Hannes E. Stueckler
Assistant Northwest District Engineer
Water Quality Division

James Brough, P.E.
Northwest District Engineer
Water Quality Division

xc: PDF to Cheyenne
PDF to Kevin Frank, DEQ
David Knoepke P.E., Gores and Associates, 11 N. 3rd St. E., Riverton, WY 82501

Lander Field Office • 510 Meadowview Drive • Lander, WY 82520 • <http://deq.state.wy.us>

ABANDONED MINES
(307) 332-5085
FAX 332-7726

AIR QUALITY
(307) 332-6755
FAX 332-7726

LAND QUALITY
(307) 332-3047
FAX 332-7726

SOLID & HAZARDOUS WASTE
(307) 332-6924
FAX 332-7726

WATER QUALITY
(307) 332-3144
FAX 332-7726





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

NOTIFICATION OF COVERAGE

January 22, 2010

Paul Hladky
Cyclone Drilling
PO Box 908
Gillette, WY 82717

RE: Cyclone Drilling Small Commercial Wastewater System, Campbell County
Location: Mohan Subdivision Lot 7, 8, and 9; Permit # 09-694

Dear Mr. Hladky:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install, or modify the facility in accordance with general permit and the materials submitted in your application package. The General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage,

http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

Additionally, the following permit condition applies:

1. Cleanouts are required every 100 feet and at all changes in direction 22.5 degrees and greater, both horizontal and vertical. This requirement includes both the pipeline from the house to the septic tank and from the septic tank to the leachfield.
2. Either a 6-inch diameter clean-out riser or a manway from each compartment of the septic tank must be extended to the ground surface from all septic tanks.

Please contact the Campbell County Building and Zoning Department at 307.682.1970 for compliance with any further county regulations. **Septic systems shall not be installed during adverse weather. This includes rain, snow, severely cold temperatures, or excessively moist soils.** If you have any questions, please contact me at (307) 777.6941.

Sincerely,

Suzanne Engels
WDEQ/WQD

SE/rm/10-0060

cc: IPS, Cheyenne
WYDEQ Casper File
John Boniface, Campbell County, 500 S Gillette Ave, Ste 1400, Gillette, WY 82716
Steve Bruce, Bruce Engineering, PO Box 2284, Gillette, WY 82717

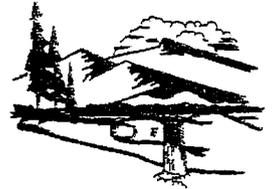
Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

NOTIFICATION OF COVERAGE

October 26, 2009

John Abbot, Mayor
Town of Meeteetse
P.O. Box 38
Meeteetse, WY 82433

RE: Meeteetse Sewer Lining 2009. DEQ Permit #09-594, Park County, Lat 44.1516, -108.8740
(Lat Long corrected from application)

Dear Mayor Abbot,

This project consists of the lining of approximately 2050 feet of existing sanitary sewer line/

The above application for coverage under General Permit has been reviewed in accordance with Chapter 3, Section 7; and Chapter 11, Part B of the Wyoming Water Quality Rules and Regulations and is hereby approved.

You are authorized to construct, the facility in accordance with the general permit and the materials submitted in your application package. Your attention is directed to the mandatory reporting requirements outlined in Part V, Section O of the general permit.

These General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage. The General Permits can be found under the Water Quality Division Water and Wastewater Program, Engineering and Technical Services at:

http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

If you have any questions, please contact Hannes Stueckler at 307-335-6964 or James Brough at 307-335-6961.

Sincerely,

Hannes E. Stueckler
Assistant Northwest District Engineer
Water Quality Division

James Brough, P.E.
Northwest District Engineer
Water Quality Division

xc: PDF to Cheyenne
PDF to Kevin Frank, DEQ
David Knoepke P.E., James Gores and Associates, 11N. 3rd St. E., Riverton, WY 82501

Lander Field Office • 510 Meadowview Drive • Lander, WY 82520 • <http://deq.state.wy.us>

ABANDONED MINES
(307) 332-5085
FAX 332-7726

AIR QUALITY
(307) 332-6755
FAX 332-7726

LAND QUALITY
(307) 332-3047
FAX 332-7726

SOLID & HAZARDOUS WASTE
(307) 332-6924
FAX 332-7726

WATER QUALITY
(307) 332-3144
FAX 332-7726





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

NOTIFICATION OF COVERAGE for **AS-BUILT SEPTIC SYSTEM**

November 23, 2009

Ron Eisenbarth
2150 W. Walnut, P.O. Box 582
Wheatland, WY 82201

RE: Wendling AS-BUILT Residential Septic System, Application No. **09-595**
Location: SE¼ SW¼, Section 15, T24N, R68W, Platte County

Dear Mr. Eisenbarth:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility for a **4 bedroom** house in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. This Notification of Coverage is issued in response to your submission and completion of the required septic system information for an as-built permit in accordance with Chapter 11, Part D of the Water Quality Division Rules and Regulations.

The information submitted generally indicates that this previously unpermitted subsurface construction does meet DEQ/WQD governing regulations for Small Wastewater Systems, and this As-Built "Notification of Coverage" is hereby issued.

If you have any further questions, please contact me at (307) 777-6183.

Sincerely,

Ronald L. Ewald
Consulting Engineer
Southeast District, Water Quality Division

RLE/rm/9-1037

cc: IPS, Cheyenne
Platte County Planning Office, Dennis Becker, PO Box 728, Wheatland, WY 82201

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

NOTIFICATION OF COVERAGE

October 22, 2009

Roy Conzelman
342 HWY 24
Devils Tower, WY 82714

RE: Conzelman Small Residential Wastewater System, Crook County
Location: SW ¼, Section 28, T53N, R65W; Permit # 09-596

Dear Mr. Conzelman:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install, or modify the facility in accordance with general permit and the materials submitted in your application package. The General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage,

http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

Additionally, the following permit condition applies:

1. Cleanouts are required every 100 feet and at all changes in direction 22.5 degrees and greater, both horizontal and vertical. This requirement includes both the pipeline from the house to the septic tank and from the septic tank to the leachfield.
2. Either a 6-inch diameter clean-out riser or a manway from each compartment of the septic tank must be extended to the ground surface from all septic tanks.

Please be advised that Crook County inspects all small wastewater systems permitted through WDEQ. Please contact Crook County Growth and Development at 307.283.4548 to arrange an inspection of the system. **Septic systems shall not be installed during adverse weather. This includes rain, snow, severely cold temperatures, or excessively moist soils.** Please contact me with questions at (307) 777-6941.

Sincerely,

Suzanne Engels
WDEQ/WQD

SE/rm/9-0945

cc: IPS, Cheyenne
WYDEQ Casper File
Tim Lyons, Crook County Growth and Development
Randy Gantz, Gantz Backhoe Service, P.O. Box 281, Hulett, WY 82720

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

NOTIFICATION OF COVERAGE

October 27, 2009

Jim Dacar
36 Dacar Road
Belle Fourche, SD 57717

RE: Muleshoe Ranch #3 Small Residential Wastewater System, Crook County
Location: SE 1/2, Section 19, T56N, R61W; Permit # 09-597

Dear Mr. Dacar:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install, or modify the facility in accordance with general permit and the materials submitted in your application package. The General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage,
http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

Additionally, the following permit condition applies:

1. Cleanouts are required every 100 feet and at all changes in direction 22.5 degrees and greater, both horizontal and vertical. This requirement includes both the pipeline from the house to the septic tank and from the septic tank to the leachfield.
2. Either a 6-inch diameter clean-out riser or a manway from each compartment of the septic tank must be extended to the ground surface from all septic tanks.

Please be advised that Crook County inspects all small wastewater systems permitted through WDEQ. Please contact Crook County Growth and Development at 307.283.4548 to arrange an inspection of the system. **Septic systems shall not be installed during adverse weather. This includes rain, snow, severely cold temperatures, or excessively moist soils.** Please contact me with questions at (307) 777-6941.

Sincerely,

Suzanne Engels
WDEQ/WQD

SE/rm/9-0964

cc: IPS, Cheyenne
WYDEQ Casper File
Tim Lyons, Crook County Growth and Development
Caleb Dacar, Dacar Construction, 192 Dacar Rd, Belle Fourche, SD 57717





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

NOTIFICATION OF COVERAGE

October 27, 2009

Jim Dacar
36 Dacar Road
Belle Fourche, SD 57717

RE: Muleshoe Ranch #1 Small Residential Wastewater System, Crook County
Location: SE ¼, Section 29, T56N, R61W; Permit # 09-598

Dear Mr. Dacar:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install, or modify the facility in accordance with general permit and the materials submitted in your application package. The General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage, http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

Additionally, the following permit condition applies:

1. Cleanouts are required every 100 feet and at all changes in direction 22.5 degrees and greater, both horizontal and vertical. This requirement includes both the pipeline from the house to the septic tank and from the septic tank to the leachfield.
2. Either a 6-inch diameter clean-out riser or a manway from each compartment of the septic tank must be extended to the ground surface from all septic tanks.

Please be advised that Crook County inspects all small wastewater systems permitted through WDEQ. Please contact Crook County Growth and Development at 307.283.4548 to arrange an inspection of the system. **Septic systems shall not be installed during adverse weather. This includes rain, snow, severely cold temperatures, or excessively moist soils.** Please contact me with questions at (307) 777-6941.

Sincerely,

Suzanne Engels
WDEQ/WQD

SE/rm/9-0965

cc: IPS, Cheyenne
WYDEQ Casper File
Tim Lyons, Crook County Growth and Development
Caleb Dacar, Dacar Construction, 192 Dacar Rd, Belle Fourche, SD 57717

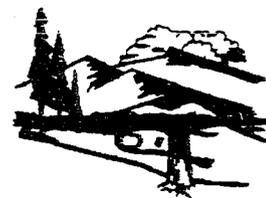
Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

NOTIFICATION OF COVERAGE

October 27, 2009

Jim Dacar
36 Dacar Road
Belle Fourche, SD 57717

RE: Muleshoe Ranch #2 Small Residential Wastewater System, Crook County
Location: NE ¼, Section 29, T56N, R61W; Permit # 09-599

Dear Mr. Dacar:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install, or modify the facility in accordance with general permit and the materials submitted in your application package. The General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage,

http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

Additionally, the following permit condition applies:

1. Cleanouts are required every 100 feet and at all changes in direction 22.5 degrees and greater, both horizontal and vertical. This requirement includes both the pipeline from the house to the septic tank and from the septic tank to the leachfield.
2. Either a 6-inch diameter clean-out riser or a manway from each compartment of the septic tank must be extended to the ground surface from all septic tanks.

Please be advised that Crook County inspects all small wastewater systems permitted through WDEQ. Please contact Crook County Growth and Development at 307.283.4548 to arrange an inspection of the system. **Septic systems shall not be installed during adverse weather. This includes rain, snow, severely cold temperatures, or excessively moist soils.** Please contact me with questions at (307) 777-6941.

Sincerely,

Suzanne Engels
WDEQ/WQD

SE/rm/9-0966

cc: IPS, Cheyenne
WYDEQ Casper File
Tim Lyons, Crook County Growth and Development
Caleb Dacar, Dacar Construction, 192 Dacar Rd, Belle Fourche, SD 57717

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---





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

NOTIFICATION OF COVERAGE

October 23, 2009

Michael and Jessica Sandford
P.O. Box 251
Beulah, WY 82712

RE: Sandford Small Residential Wastewater System As-Built,
Location: 546 Redwater Road, Crook County, SW ¼, Section 30, T53N, R60W
Reference: Notice of Violation, Docket Number 4376-08; As Built Permit # 09-600

Dear Mr. and Mrs. Sandford:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. The General Permit requirements can be downloaded from the Wyoming Department of Environmental Quality webpage, http://deq.state.wy.us/wqd/www/Permitting/Pages/general_permits.asp

This Notification of Coverage is issued in response to the submission and completion of the required septic system information for an as-built permit. The system generally complies with Wyoming Department of Environmental Quality/Water Quality Regulations governing Small Wastewater Systems.

Additionally, the following permit conditions apply:

- a) Crook County Growth & Development inspects all small wastewater systems permitted through WDEQ and an inspection of this small wastewater treatment facility must be conducted by County staff. A completed Application for Inspection of Small Wastewater Treatment Facility Installation along with the \$200.00 inspection fee must be submitted to the County within 15 days of the issuance of this Notification of Coverage.

If you have any questions, please contact me at (307) 777-6941.

Sincerely,

Suzanne Engels
WDEQ/WQD

SE/rm/9-0951

cc: IPS, Cheyenne
WYDEQ File
Dennis Forgey, PO Box 1044, Spearfish, SD 57783
Tim Lyons, Crook County Growth and Development

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7937 FAX 777-3610	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
--	---	---	---	--	--	---



Handwritten notes and a signature in the top right corner.

A horizontal line of text, possibly a header or separator, spanning the width of the page.

Main body of handwritten text, appearing as a list or series of entries, though the individual characters are mostly illegible due to fading and bleed-through.