IN THE DISTRICT COURT OF THE FIRST JUDICIAL DISTRICT
COUNTY OF LARAMIE, STATE OF WYOMING

In the Matter of the Appeal of the WDEQ Director's Decision to a Requested Variance for Sheridan Landfill SHWD File # 10.526	))))	**Docket No. 11-5801**

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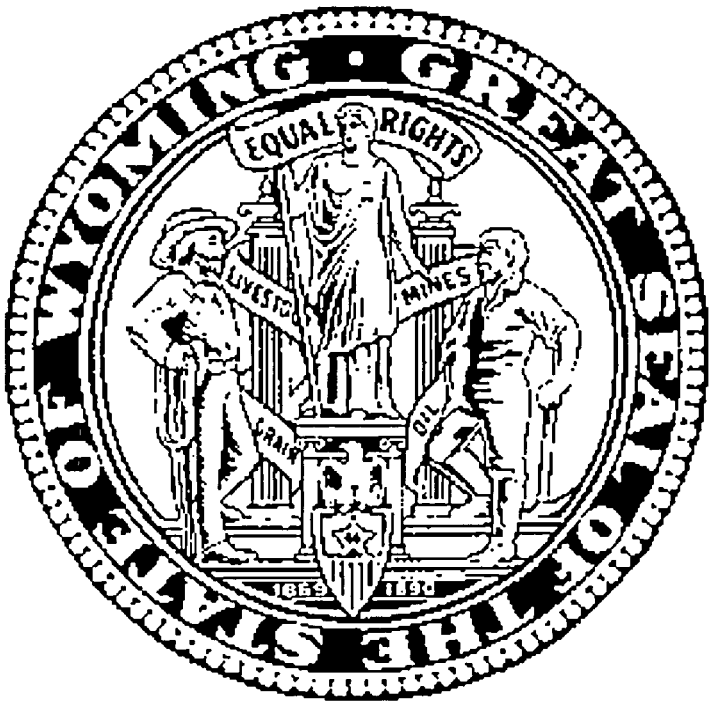

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Burns & McDonnell
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December 30, 2009

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Casper DEQ

Mr. Dale Anderson
Wyoming Department of Environmental Quality
Solid and Hazardous Waste Division
152 N. Durbin Street, Suite 100
Casper, Wyoming 82601

Site Location Restriction Demonstration
Proposed MSW and C&D Landfill Development
City of Sheridan Landfill, Sheridan, Wyoming
Burns & McDonnell Project Number: 49341

Dear Mr. Anderson:

On behalf the City of Sheridan, Wyoming (City), Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) is pleased to provide the enclosed Site Location Restriction Demonstration and Variance Request for the Proposed Municipal Solid Waste (MSW) and Construction and Demolition (C&D) Landfill Development Reports to the Wyoming Department of Environmental Quality (WDEQ).

As the WDEQ is aware, the City has acquired approximately 100 acres of land immediately south of the currently active City Landfill as an alternative for long-term waste disposal. The City desires to permit both a MSW landfill and a C&D landfill on the 100 acres. The documents included herewith have been prepared in accordance with the Wyoming Solid Waste Rules (WSWR), Chapter 2 – Sanitary Landfill Regulations, Section 3 and Chapter 4 – Construction/Demolition Landfill Regulations, Section 3.

As the active landfill reaches its maximum capacity, additional space will be needed for local MSW and C&D disposal. The City has invested significantly and wisely in historical and current detailed environmental investigations. The environmental investigations collectively demonstrate the current landfill does not pose an environmental risk to the health, safety, welfare, and environment. Additionally, the proposed landfill designs will provide superior protection of the surrounding environment and community. The City is committed to continue its tradition of environmental stewardship and to excellence in solid waste management.

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DEQ Exhibit 1

We appreciate your timely review of the Site Location Restriction Demonstration and Variance Request for the proposed MSW and C&D landfill development. If you have any questions or require additional information, please do not hesitate to contact the undersigned at (816) 349-6730 or via email at bkean@burnsmcd.com.

Sincerely,

Brandy Kean

Brandy Kean
Project Manager

BSK/sn

Enclosures: Site Location Restriction Demonstration for the Proposed MSW and C&D Landfill Development (3)
Variance Request for the Proposed MSW and C&D Landfill Development (3)

cc: Mr. Christopher Knodel, P.E., Utilities Project Manager, City of Sheridan, Wyoming

Site Location Restriction Demonstration

Proposed MSW and C&D Landfill Development

for

City of Sheridan, Wyoming

Project Number 49341

December 2009

Burns & McDonnell
SINCE 1898

The State
of Wyoming

Department of Environmental Quality

Dave Freudenthal, Governor

John Corra, Director

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

March 31, 2010

Mr. Charles Martineau
Solid Waste Manager
P. O. Box 848
Sheridan, WY 82801

RE: Comments on the draft variance request for proposed municipal solid waste landfill expansion, Sheridan landfill, SHWD File #10.526

Dear Mr. Martineau:

The Wyoming Department of Environmental Quality, Solid and Hazardous Waste Division (Department) received a Site Location Restriction Demonstration and Variance Request for the above referenced facility dated December 30, 2009, received by the Department on December 31, 2009. The documents were submitted by Burns & McDonnell on behalf of the Town of Sheridan. The purpose of this letter is to provide Department comments on these documents.

The City of Sheridan, in order to provide for additional landfill capacity, has requested Department approval of a lateral expansion of the existing facility boundaries for disposal of municipal solid waste (MSW) and construction and demolition (CD) waste. The existing Sheridan landfill is expected to be filled in 2017. As required by Solid Waste Rules and Regulations (SW) Chapter 2 Sanitary Landfill Regulations and Chapter 4 Construction/Demolition Landfill Regulations, lateral expansions must comply with location standards in Section 3(a) and 3, respectively.

The City of Sheridan is requesting a variance from the following location standards:

- *W.S. 35-11-502(c)(ii)*, location of facility within one mile of an occupied dwelling house except with the written consent of the owner;
- *W.S. 35-11-502(c)(iv)*, location of facility within one-half (1/2) mile of a water well permitted or certificated for domestic or stock watering purposes except with written consent of the owner of the permit or certificate; and
- *W.S. 35-11-502(c)*, no facility greater than one acre in size shall be located within one mile of the boundaries of an incorporated city or town.

The City of Sheridan's Variance Request was evaluated for compliance with SW Chapter 1 Section 2(i) for variance applications. The Department's comments and observations are provided below. General comments are provided first followed by comments specific to each section, generally organized following the requirements in SW Chapter 1 Section 2(i).

General Comments

1. Text on page 1-1, 2-1, 2-2, and elsewhere references two new landfills, one for municipal solid waste (MSW) and one for construction demolition waste. Because this is an expansion of an existing MSW landfill, the Department considers the entire expansion area to be an MSW landfill, even if the City proposes separate cells for MSW and CD waste. Please revise text here and elsewhere to clarify that the expansion area is a single MSW landfill. The application indicates plans to operate lined MSW disposal areas with a dedicated unlined area for CD waste disposal. This subject is discussed further below.

2. Text on page 2-1 indicates that monitoring of natural attenuation processes over time has allowed for the unlined CD design. The information provided is not sufficient for the Department to determine that operation of an unlined CD landfill cell is appropriate at this site. The variance request will either need to be revised to provide additional information, or will need to contain a proposal for lined CD disposal. In particular, consistent with the Department's 2007 memorandum on the subject, information is needed regarding the groundwater separation distance for the proposed unlined CD area and ambient water quality data. Depending on that information, additional information may be needed regarding the natural attenuation processes discussed in the variance application. Specifically information may be needed describing how those processes would address elevated concentrations of sulfate, chloride, ammonia, nitrate and other inorganic pollutants related to CD waste leachate. Until sufficient information is provided to allow for a complete evaluation of the CD landfill design, the Department cannot approve an unlined CD landfill at this location or this variance application. See additional comments on natural attenuation elsewhere in this review.

3. Text on page 2-2 states there is a lined storm water detention pond in the southwest corner of the existing landfill that drains to the northwest through the existing landfill in a slip lined drain pipe. The Department is not aware that the referenced detention pond is lined. Also, the pond drains to the northwest through the old landfill not the existing landfill as written. Please revisit this subject and revise text as necessary.

4. Text on page 2-2 states that the proposed expansion does not pose any impact to endangered plant/animal habitat, wildlife corridors, and historical/archeological sites and is located away from faults, wetland, floodplains, and other restricted areas. Please revise text to include mention of where additional discussion on these subjects may be found, including supporting documentation.

5. Text on page 2-3 states that wastes will be received from within Sheridan County as well as other communities, haulers, and private individuals outside of the County if deemed appropriate by the on-going Integrated Solid Waste Planning activities currently mandated by the DEQ. Text on page 2-5 states that if wastes are accepted from a larger geographical area in the future, the life estimates will decrease. Text also states that the proposed volumes and site life estimates are approximate, and that the site capacity and life estimates will be further refined in a Design Criteria Report that will be provided to the Department prior to permitting. The SW Rules do not require a Design Criteria Report. The information in the referenced Design Criteria Report should be provided with the variance application.
Note that in granting any variance, the director shall condition the variance such that it applies only to the facility described in the application. As described in SW Chapter 1, Section 2(i)(i)(D)(IV), changes to the following aspects of the facility shall render the variance invalid:

- **facility size,**
- **type (including chemical analyses if other than household refuse),**
- **source of incoming waste,**

- **amount of incoming waste,**
- **rate (tons per day) at which waste is received,**
- **facility operating procedures, and**
- **the estimated site capacity and site life**

Therefore, the City needs to evaluate and estimate the above information for the potential future development of the facility and include that information in the variance application.

6. Text in Section 2.2 on page 2-2 states that the MSW expansion will encompass no more than 80 acres and the CD area will consist of no more than 40 acres, and the total development area is not expected to exceed 102 acres. However, the acreages provided in Appendix B do not agree with these figures. Please revise text to clarify the differences. Presumably the differences are related to things such as access roads, buffer zones, etc.

7. Text on page 3-1 states that the proposed expansion is within one mile of the City limits, is located within 1 mile of several occupied dwellings and therefore a variance is requested. Per SW Chapter 2 Section 3(a)(iii) a variance is not needed if written consent is obtained from the owners of the affected residences. This also applies to schools; the variance request is silent on whether schools are also involved. Because a variance is only needed if written consent cannot be obtained, the City needs to first attempt to contact and obtain written consent from landowners. The variance request will need to be revised to include discussion of the City's efforts to obtain written consent from all affected property owners, along with supporting documentation.

The same comment applies to the variance request related to the distance to water supply wells, given there is no discussion or documentation of efforts made to obtain written consent of the owners of the wells.

Specific Comments

CHAPTER 1, SECTION 2 (i)(i)(A)

For proposed facilities which do not meet the location standard for proximity to towns, schools or any occupied dwelling:

> *(II) Demonstrate that the operation of the proposed facility will not present odor, dust, litter, insect noise, health (human and animal)or aesthetic problems, and will not present a public nuisance by its proximity to the town, schools and/or dwellings. This demonstration may be made through analysis of the facility design and operation practices;*

1. Page 2.6 of the Site Location Demonstration document accompanying the variance request states that there are no rules in Chapter 2 of the WSWR pertaining to dust, odor, and nuisance potential, therefore this restriction is not applicable to municipal solid waste facilities. This statement is incorrect. Operating standards in SW Chapter 2, Section 5 (n) requires that adequate measures shall be taken to minimize dust and odors. Please revise variance request text as necessary. As detailed above, the City must demonstrate that the location of this landfill will not present odor, dust, litter, insect noise, health (human and animal) or aesthetic problems, AND will not present a public nuisance by it proximity to the schools and/or dwellings.

CHAPTER 1, SECTION 2(i)(i)(C)

For proposed facilities, excluding incinerators, which do not meet the location standard for proximity to water wells in W.S. 35-11-502(c)(iv), the applicant shall provide:

(I) A detailed description of the site's geologic and hydrologic characteristics, supported by data from on-site soil borings and groundwater monitoring wells;

(II) A detailed description of the proposed facility's containment system (cap and liner systems) and surface water diversion structures;

(III) A detailed description of the groundwater monitoring program (including location of wells, sampling frequency and sampling parameters) which would be instituted when the facility begins operations;

(IV) An analysis of the potential for contaminants which may leak from the disposal facility to adversely affect the nearby water well(s). This analysis may be in the form of contaminant transport modeling results, an evaluation of hydrologic conditions or aquifer properties or other applicable information.

1. Section 4 contains information supporting the request for a variance from the distance to drinking water sources. As noted above, the City will need to document efforts to obtain written consent from well owners, and include supporting documentation in the variance request. Also, as discussed below, while the information provided in Section 4 is consistent with SW Chapter 2 Section 2(i)(i)(C)(IV) it does not adequately demonstrate, using site specific information, that the proposed facility will not adversely affect nearby water wells.

2. The discussion of geologic information in Section 4 contains only limited geologic and hydrogeologic information specific to the proposed expansion. Text needs to be revised to include discussion of lithologies identified in the three borings that were completed and the H series wells. A table is needed of depths to groundwater in these piezometers, the H series wells, and other wells used to generate the water table map. Please provide copies of the boring logs and well construction information for the H series borings. Also, in light of the observation that all the borings were drilled in topographically higher areas, text needs to include discussion of the likely depths to groundwater in lower portions of the expansion area. This has bearing on the separation distance from the base of waste in the proposed unlined CD fill area. The proposed base elevation of the CD fill area(s), groundwater separation distance, and ambient water quality data must be provided for the Department to evaluate whether that information is sufficient for the Department to determine whether an unlined CD disposal area is appropriate at this location. Alternatively, the City may propose to line all disposal areas in the proposed expansion area.

3. Text on pages 4-4 through 4-6 needs to be revised to include a range of groundwater velocities using a range of K values and effective porosity values, rather than average values using the measured values for the proposed expansion and the existing landfill, since it is immediately adjacent to the proposed expansion. This information is included in Table 4-5 but there is no discussion in text of the maximum values.

Use of average values substantially masks the real variation in travel times that may or do exist. The Department notes that Table 4-5 discounts the highest measured K value as an anomaly. Using the next highest K with the site wide average gradient and the stated effective porosity yields a 43 year travel time for the noted ½ mile travel distance in comparison to the stated average value of 74 years. Also supporting the potential for relative rapid groundwater travel times is the observation that groundwater impacts by inorganic constituents apparently began to occur in well N8 within a few years of the

beginning of waste placement in 1985. Concentrations of some constituents in N8 have increased by a factor of 3 to 5 times above the initial concentrations.

In addition, the Department does not agree that the 35 % effective porosity that was used in groundwater velocity calculations is conservative, as stated. The Department notes that there are numerous sources for this information that contain lower values. See for example Domenico and Schwartz (Physical and Chemical Hydrogeology, 1990) which contains a range from 0.5 to 10% for the effective porosity of sandstone, or Maidment (Handbook of Hydrology, 1993) which contains a value of 20% for the effective porosity of sandy materials. This is an important point because if lower values of effective porosity are actually present, the use of a single value instead of a range for an estimated parameter masks the potential for understanding that groundwater may be moving faster than believed.

Text notes that the three values for K from the existing landfill range from 0.02 to 0.08 feet per day, yet the range of hydraulic conductivity values presented from the immediately adjacent existing landfill ranges from 0.00265 feet per day to 1.84 feet per day (discounting the 3.24 feet per day value). In light of the close proximity of the existing landfill to the proposed expansion, it seems likely that the real range of hydraulic conductivity values at the proposed expansion area is larger than currently estimated.
Last on this subject, it is not clear why a ½ mile distance was used to calculate the time of travel estimate. The Department notes that Figure 3.1 indicates the nearest downgradient wells are significantly closer to the landfill than the ½ mile distance. On that basis, using a distance more representative of the distance to the nearest downgradient well would be more appropriate.

4. Per SW Chapter 1 Section 2(i)(i)(C) (II) text in Section 4 needs to be expanded to include discussion of the containment system (cap and liner systems) and surface water diversion structures. There does not appear to be mention of this subject in the information supporting the variance request for distances to wells. In light of the observation that the MSW disposal area will be lined this would seem to be of particular applicability to the MSW disposal area. Text should also be revised to discuss the effectiveness of the leachate collection and removal system for the MSW disposal area, and how that will assist in protecting groundwater beneath the proposed facility. Such information is available from past EPA reports on the effectiveness of waste containment systems.

5. There is a relatively in-depth discussion of recent MSW leachate from the existing landfill data on pages 4-6 through 4-9. While the information is useful, it is, unfortunately, difficult to adequately characterize potential long term variations in leachate quality (and therefore potential groundwater impacts) with the temporally limited data available. Possibly due to staff turnover (current City staff may not have been aware of older samples), the leachate evaluation did not include older leachate samples from T-8 collected in 2003 nor did it include discussion of conventional pollutants such as nitrate (or ammonia), chloride, sulfate, etc. In particular, the Department notes that previous leachate samples from T-8 for methylene chloride reported concentrations of 131 ug/l and 413 ug/l in two samples from November of 2003. These are two to six times higher than the values included in the evaluation in the variance request. And, there are higher concentrations of nitrate (ammonia in leachate), sulfate, and chloride in groundwater than were reported in the 2003 leachate samples, indicating the 2003 leachate samples do not adequately represent the highest concentrations that have occurred since disposal began. This information illustrates the wide variations known to occur in leachate quality over the operating life of a landfill and the possible difficulty of describing potential groundwater impacts based on that information. Text needs to be revised in consideration of this information.

6. The natural attenuation discussion on pages 4-9 through 4-1 references work done at the old landfill, and describes the degradation of various organic pollutants as described in reports for the old Sheridan

landfill. However, this section does not appear to acknowledge the differences between the sites. The natural degradation identified at the old landfill occurs largely if not exclusively in waste that is saturated with groundwater where there are anaerobic conditions present. In contrast, at the proposed landfill wastes will not be in contact with groundwater. Also, most other groundwater in the area is likely under aerobic conditions, as deduced from the presence of nitrate as the dominant oxygen species, and the available ORP data from groundwater monitoring. In addition, while some pollutants do appear to exhibit degradation, others do not exhibit sufficient degradation to be reduced below levels of concern. For example, nitrate is present in groundwater at levels above MCLs, and elevated concentrations of chloride and sulfate in particular, are present as a result of past disposal in unlined disposal areas. No information has been submitted regarding the potential for natural attenuation outside the waste footprint to support assumptions that natural attenuation will occur. Text needs to be revised in consideration of this information.

7. Text on pages 4-10 and 4-11 discusses the concept of applying a dilution and attenuation factor (DAF) to known leachate concentrations. Consistent with the Department's Voluntary Remediation Program, the Solid Waste Permitting and Corrective Action Program does not allow utilization of an assumed DAF greater than 1 unless supported by site specific information; site specific information is not included in the variance request. Text will need to be revised in consideration of this point.

8. The City proposes lining only the MSW disposal area, but not the CD disposal area. Leachate from CD landfills does have the ability to cause groundwater pollution. Therefore, it is necessary to include a discussion of CD leachate and the potential for the unlined CD area to impact groundwater. The Department is aware that CD leachate information from Wyoming is not available, and is therefore agreeable to use of data available from other states with appropriate caveats. In addition, the variance application needs to include a detailed description of the waste screening procedures that will be used to ensure that only acceptable waste is disposed in the CD area. This information would not be required if the City revises its approach and lines the entire expansion area.

9. Text on page 4-11 includes discussion of the organic carbon content of the Wasatch Formation as noted in a report from the old landfill. The Department provided comments on this information after the date of the variance request, so the Department's comments were not available for consideration for this document. In short, only two of 11 samples from the old landfill contained more than 0.33% organic carbon. For comparison, the Department's Voluntary Remediation Program uses a default total organic carbon concentration of 0.1% for fate and transport calculations; the EPA's 1996 Soil Screening Guidance uses a default value of 0.2% for total organic carbon. These values are meant to be conservative; that is, on the low end of the possible range of concentrations. More than half of the total organic carbon concentrations from the old landfill are essentially equal to or less than either the Department's or EPA's default organic carbon concentrations. Given this information, it would seem that the information in the old landfill report overstates the presence of total organic carbon and the related potential sorptive capacity to retard contaminant migration.

10. Text on page 4-12 indicates that the emissions from CD landfill leachate are attenuated in the subsurface. Because of the proposed unlined CD disposal area and available CD leachate information, text needs to be revised to include discussion of the natural attenuation mechanisms for conventional pollutants in CD leachate that can cause groundwater impacts, such as sulfate, chloride, ammonia, nitrate, etc. One possible component of such a discussion would be to compare leachate data to ambient water quality information.

Alternatively, this portion of the text could be revised to include discussion of site specific information on the separation distance between the base of the unlined CD area and groundwater, and ambient water quality, in consideration of information provided in the Department's memorandum Screening Criteria for Operation of Unlined Construction/Demolition Disposal Facilities dated August 24, 2007.

11. Please include discussion of the amount of leachate generated to date from T-9, in light of the observation that this lined MSW cell has a flow meter. This information could be used to bolster the estimated 0.75 inches of recharge from the cited report by Lowery (1966).

12. In the section titled Analysis of Potential Receptors on page 5-1 the variance application discusses groundwater recharge to irrigation/stock wells screened primarily in alluvial material in contrast to recharge from the lower hydraulic conductivity of the Wasatch Formation. Please revise text to include discussion of how groundwater from the Wasatch Formation is or may be connected to groundwater in alluvial materials.

13. On page 5-1 text states... "In the slight possibility that groundwater is impacted by the landfill"... Given the documented groundwater impacts at the existing landfill resulting from past operation of unlined disposal areas, the potential for impacts from unlined disposal areas would appear to be more than "slight". After consideration of previous comments and the observation that only the CD disposal area is currently proposed to be unlined, the variance application needs to address the potential for impacts from the proposed unlined CD disposal area.

CHAPTER 1, SECTION 2 (i)(i)(D)

In addition to other information requested in this subsection, all variance applications made under this subsection shall be accompanied by the following information:

(I) The proposed size of the facility

(II) The name, address and telephone number of the applicant

(III) The legal description of the property.

(IV) A detailed description of the facility which includes information on the amount, rate (tons per day), type (including chemical analyses if other than household refuse) and source of incoming wastes, a narrative describing the facility operating procedures, and the estimated site capacity and site life.

(V) The names and addresses of the property owners of all lands within one mile of the proposed facility.

(VI) A USGS topographic map (scale of 1:24,000 or 1:62,500) which shows the boundaries of the proposed site, and;

(VII)Information sufficient to evaluate the conditions specified in paragraph (i)(ii) of this section.

1. Lifetime volume calculations in Appendix B and in text state that the expansion area landfill volumes and related life are approximately 60 years. Please see previous comments on the subject of site capacity and revise text as necessary.

CHAPTER 1, SECTION 2 (ii)

In granting a variance as provided by this paragraph, the director shall issue written findings that the variance will not injure or threaten to injure the public health, safety, or welfare. The director shall only make such a finding if the evidence presented in the application and the public hearing demonstrates that:

(A) There are no available alternative locations which meet the location standards for a solid waste management disposal facility to meet the disposal needs of the applicant, within a reasonable distance of the boundary of the service area of the facility; and

(B) It is not possible for the applicant to use existing, permitted solid waste management disposal facilities owned by another person within a reasonable distance of the boundary of the service area of the facility.

(C) Special or unique conditions or circumstances apply to the applicant and justify granting the variance.

1. The variance request discusses only two alternate locations, both of which were mentioned in the City's 2001 Solid Waste management Plan. The variance request needs to be revised to include an expanded discussion of possible alternative locations. As has been previously discussed, one way this could be done is through the use of GIS to identify unsuitable areas due to location standards such as the noted grouse habitat, distances to wells, residences, roads, etc.

2. The City will need to provide a more detailed analysis regarding the potential to use other currently permitted disposal facilities. This will need to include documentation that potential alternate facilities are unwilling to accept waste from Sheridan, and more detailed information regarding haul costs and consideration of tipping fees at the receiving facility. The Department notes that text on page 5-3 states that the City's Integrated Solid Waste Management (ISWM) plan concluded a haul distance of 50 miles would increase costs approximately $19/ton and was therefore unjustifiable. In contrast, three other per ton mile costs from other ISWM plans, and from one entity hauling waste approximately 100 miles are in the range of $0.19 to $0.25 per ton mile. Depending on the tipping fee at the receiving facility, the potential exists that a lower tipping fee will partially offset the hauling costs. This point was not considered in the variance application. A more detailed evaluation is needed to support conclusions that operating a lined landfill at the proposed location is more cost-effective than transporting waste to another facility. Also, transport to Billings, Montana was not considered; it appears that Billings is about the same distance as Casper, which was mentioned.

3. The Department is not in complete agreement with the second listed bulleted point on page 5-3. The Department would agree that proper operation of a properly designed and constructed lined MSW landfill at the proposed expansion would be protective of human health and the environment. However, the Department would not agree based on the information provided, that an unlined CD landfill would not pose an environmental risk. As discussed above, additional assessment of this subject is necessary.

Comments on Site Location Restriction Demonstration

At this time the Department only has limited comments on the Site Location Restriction Demonstration document, as follows:

1. Text on page 2-1 states that the property is currently owned by the County. Based on the Department's understanding of ownership, this appears to be an error. Perhaps the text was intended to indicate the property is in the county, but will be annexed. Please check this text and revise as necessary.

2. The archeological report referenced on page 2-4 will need to be included with the permit application when the entire document is submitted.

3. The landfill permit application will also need to demonstrate compliance with the Governor's executive order regarding sage grouse habitat. This may be accomplished by providing a map of the facility location overlain by the Wyoming Game and Fish Department's sage grouse habitat.

4. The third bullet on page 3-1 lists Distance to Drinking Water Sources as meeting the applicable location standard. The proposed expansion does not appear to meet this location standard, so it should not be included on this list.

The City should be aware this is an informal review and that not all necessary information regarding location standards was included in the Site Location Restriction Demonstration for the Department to evaluate. The location standards will be formally reviewed when the complete landfill application is submitted for Department review and approval.

In summary, the Department has determined the December 30, 2009 draft variance application submitted by Burns and McDonnell on behalf of the City of Sheridan, has not adequately addressed all of the requirements listed under Chapter I, Section 2(i), of the Wyoming Solid Waste Management Rules and Regulations. On that basis, the Department is unable to approve the variance request at this time, but is not denying the variance request.

If the City desires, revisions may be made to incorporate additional information and the variance request may be resubmitted for Department review. Should the City desire, Department staff would be glad to meet with City personnel and the City's consultant to discuss outstanding issues. If you have any questions, please feel free to contact me at (307) 473-3472.

Sincerely,

Dale Anderson

Dale Anderson
District # 3 Supervisor
Solid Waste Permitting and Corrective Action Program

Cc: Carol Stark ☞ Casper SHWD File # 10.526
Tim Moe ☞ Sheridan SHWD File # 10.526
Brandy Kean, 9400 Ward Parkway, Kansas City, Missouri 64114

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September 8, 2010

Received
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Casper DEQ

Ms. Carol Stark
Solid and Hazardous Waste Division
Wyoming Department of Environmental Quality
152 N. Durbin Street Suite 100
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City of Sheridan Landfill, Sheridan, Wyoming
Proposed MSW and C&D Landfill Expansion Variance Request Response Letter
Burns & McDonnell Project No. 49341
WDEQ SHWD File #10.526

Dear Ms. Stark:

On behalf of the City of Sheridan, Wyoming, Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) is pleased to provide this letter in response to the comments provided by the Wyoming Department of Environmental Quality's (WDEQ) in a letter, dated March 31, 2010. The WDEQ March 31, 2010 letter was in response to the Variance Request for the Proposed MSW and C&D Landfill Expansion (Variance), dated December 2009. Listed below are the general WDEQ comments followed by Burns & McDonnell responses.

General Comments:

1. *COMMENT: Revise text in variance request document to clarify that WDEQ considers the entire expansion area is a single MSW landfill, even if the city proposes separate cells for MSW and CD waste.*

   RESPONSE: Based on the June 17, 2010 teleconference held between Brandy Kean (Burns & McDonnell), Dale Anderson (WDEQ), and Carol Stark (WDEQ), Construction and Demolition (C&D) language remains in the Variance text. Technical information supporting the request for an unlined C&D landfill is provided herewith in response to WDEQ comments.

2. *COMMENT: The information provided in the Variance Request regarding the monitoring of natural attenuation process over time allowing for an unlined CD design is not sufficient for WDEQ to determine that the operation of an unlined CD landfill cell is appropriate at this site. The variance request will either need to be revised to provide additional information regarding natural attenuation processes, or will need to contain the proposed groundwater separation distance for the proposed unlined CD landfill area and ambient water quality data.*

   RESPONSE: The Variance text has been revised to include site specific information including a minimum 20 foot separation distance between the base of the proposed unlined C&D area and groundwater (Section 2.5.4) and ambient groundwater quality (Section 4.3). Regarding the natural attenuation (NA), as discussed in comment 6 below, Section 4.6 text has been expanded to include NA methodology, mechanisms,

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DEQ Exhibit 3

effectiveness for remediation, enhanced attenuation, and NA monitoring. Ambient water and leachate quality discussions were added to Section 4.0 along with a comparison of the leachate and ambient water quality.

3. COMMENT: *WDEQ is not aware that the detention pond in the southwest corner of the existing landfill is lined. The pond drains to the northwest through the old landfill (not existing landfill).*

   RESPONSE: The text on page 2-2 has been revised to reflect these changes.

4. COMMENT: *Revise text to include mention of where additional discussion regarding restriction location information of the proposed landfill expansion area with supporting documentation can be found.*

   RESPONSE: This information was provided in Section 2.0 of the Site Location Restriction Demonstration report, dated December 2009. Supporting documentation in appendices was provided as a separate document. Text related to the restrictions that were met was therefore deleted from the Variance.

5. COMMENT: *Text on page 2-3 and page 2-5; information in the referenced Design Criteria Report should be provided with the variance application; changes in facility size, type, source of incoming waste, amount of incoming waste, rate waste is received, operating procedures, and estimated site capacity and site life shall render the variance invalid and therefore evaluate and estimate the above information for the potential future development of the facility and include that information in the variance application.*

   RESPONSE: The text on page 2-3, page 2-5, and Appendix B have been revised to provide estimated future waste acceptance rates, as directed by WDEQ in a conference call on June 17, 2010. The source of incoming waste, amount of incoming waste, rate waste received, and estimated facility life calculations have been estimated, noted, and revised.

6. COMMENT: *Revise text to clarify the differences between the acreage for the MSW and CD expansion cells.*

   RESPONSE: The text has been modified to reflect the acreage of the proposed MSW and C&D cells. The proposed MSW expansion will encompass approximately 51 acres. The proposed C&D development area will consist of approximately 29 acres. Required setbacks, buffers, and other site infrastructure (roads, storm water features, etc.) account for the remaining acreage.

   The C&D development area (approximately 29 acres) includes an approximately 12 acre overlap on the proposed MSW landfill area. The proposed 51 acre MSW development includes an approximately nine acre overlap on the existing permitted MSW cells T-6, T-7, and T-8.

7. *COMMENT: The variance request will need to be revised to include discussion of the City's efforts to obtain written consent from all affected property owners and water supply well owners, along with supporting documentation.*

   RESPONSE: The text on page 3-1 was revised to summarize the documentation send to the well owners, which are also property owners. Minutes from meetings with two of the well/property owners in which consent for the proposed expansion could not be obtained, as well as the initial correspondence, are included in Appendix C.

Specific Comments:

CHAPTER 1, SECTION 2 (i)(i)(A)

1. *COMMENT: It is incorrect to state "There are no rules in Chapter 2 of WSWR pertaining to dust, odor, and nuisance potential". Adequate measures must be taken to minimize dust and odors. The City must demonstrate that the location of this landfill will not present odor, dust, litter, insect, noise, health (human and animal) or aesthetic problems, and will not present a public nuisance by its proximity to the schools and/or dwellings.*

   RESPONSE: The text was revised to remove reference to the rules in Chapter 2. Potential odor, dust, litter, insect, noise, health (human and animal) or aesthetic issues at both proposed landfills will be minimized by using daily protective over the waste, litter fences, and following standard operating procedures according to WDEQ solid waste regulations.

CHAPTER 1, SECTION 2 (i)(i)(C)

1. *COMMENT: City will need to document efforts to obtain written consent from well owners, and include supporting documentation in the variance request. The information provided in Section 4 does not adequately demonstrate, using specific information that the proposed facility will not adversely affect nearby water wells.*

   RESPONSE: Section 3.0 includes discussion of the correspondence with all affected well owners. Applicable correspondence documentation is included in Appendix C.

   Section 4.0 has been expanded to provided site specific information (min. 20 ft separation distance, ambient GW quality data, leachate quality data, historic 2003 leachate quality data, comparison of 2003 and 2009 leachate quality data, groundwater flow direction, estimated groundwater velocities and travel times, groundwater monitoring network, and detailed NA discussion [with enhanced attenuation technologies]). This specific information may be used by the WDEQ for leachate fate and transport modeling, if required.

2. *COMMENT: Section 4 text will need to be revised to include discussion of lithologies identified in the three borings there were completed and the H series wells. A table is needed of depths to groundwater in these piezometers, the H series wells, and other wells used to generate the water table map. Provide copies of the boring logs and well construction information for the H series borings. Include discussion of the likely depths to groundwater in the lower portions of the expansion area and provide WDEQ the proposed base elevation of the CD fill area(s), groundwater separation distance, and ambient water quality data to evaluate whether that information is sufficient for WDEQ to determine whether an unlined CD disposal area is appropriate at this location.*

   RESPONSE: The text in Section 4.2.2 has been revised to include lithologies identified in the proposed expansion area using the three borings completed as piezometers. Drill logs and well construction data regarding the H series monitoring wells and piezometers can be found in Appendix G. A table of the depth to groundwater used to generate the water table map (Fig. 4-3) was provided as Table 4-2 and includes the piezometers and H series wells. An additional table (Table 4-4) is included in the Variance to provide historic groundwater elevations of the existing wells within the proposed expansion area. Text regarding the estimated depth to groundwater beneath the proposed MSW and C&D landfills along with the minimum separation distance of 20 feet is provided in Sections 2.5.4, 4.2, and 4.6. Water quality data is provided in Section 4.3.

3. *COMMENT: Text on pages 4-4 through 4-6 need to be revised to include a range of groundwater velocities using a range of K values and effective porosity values. Provide discussion in text of the maximum values.*

   WDEQ does not agree with the stated 35% effective porosity used in groundwater velocity calculations is a conservative value. WDEQ notes numerous sources for this information that contain lower values of 0.5-10% (sandstone) and 20% (sandy materials).

   For travel time calculations, it would be more appropriate to use a shorter distance (instead of ½-mile) that is more representative of the distance to the nearest downgradient water supply well.

   RESPONSE: The text in Section 4.2.5 has been revised to include a discussion of the maximum and average groundwater velocities and travel times for both the entire Site and the proposed expansion area. Previous Table 4-5 has been revised to Figure 4-7 to include a range of estimated groundwater velocities using a range of hydraulic conductivities (K) (max, min, and avg.), effective porosity (n_e) values (10%, 20%, and 30%), and select gradients (max and avg.). Based on a telephone call on July 16, 2010 between Chris Hoglund (Burns & McDonnell), Dale Anderson (WDEQ), and Carol Stark (WDEQ), it was agreed to calculate the maximum groundwater velocity (and associated travel times) using the conservative maximum hydraulic conductivity and a n_e of 10%.

The closest downgradient water supply well is approximately 1,500 feet from the eastern boundary of the proposed footprint expansion area. This distance was used when estimating the groundwater travel times in a manner requested by WDEQ.

4. COMMENT: *Expand Section 4.0 text to include discussion of the containment system (cap and liner system) and surface water diversion structures. Also discuss the effectiveness of the leachate collection and removal system for the MSW disposal area and how it will assist in protecting groundwater beneath the proposed facility.*

   RESPONSE: Section 2.5.4 has been expanded to include a discussion of the containment system for the MSW landfill. This text also discussed the general effectiveness of the collection and removal system, and how it will assist in protecting groundwater beneath the proposed facility. A reference to Section 2.5.4 has been included in Section 4.0.

5. COMMENT: *WDEQ provided information that illustrates the wide variations known to occur in leachate quality over the operating life of a landfill and the possible difficulty of describing potential groundwater impacts based on that information. Revise text in Section 4.3 Leachate in consideration of this information.*

   RESPONSE: The text in Section 4.4 (previously Section 4.3) regarding the 2009 quarterly leachate data was left unchanged to provide support documentation of the representative leachate quality at the City of Sheridan Landfill. An additional paragraph near the end of Section 4.4.1 has been added to provide a comparison of the 2003 and 2009 leachate data from cell T-8 to show the variation of leachate quality over the life the landfill. This indicates the possible difficulty of describing potential groundwater impacts.

6. COMMENT: *Natural Attenuation section of report on pages 4-9 through 4-11 does not acknowledge the differences between the Old Landfill and proposed expansion area (e.g. saturated waste vs. unsaturated waste; anaerobic vs. aerobic). No information submitted regarding the potential for natural attenuation outside the waste footprint to support assumptions that natural attenuation will occur. Revise text to consider this information.*

   RESPONSE: Text has been added in Section 4.6 to indicate the different conditions between the former landfill site and the proposed landfill expansion area (saturated waste vs. unsaturated waste; anaerobic vs. aerobic conditions).

   Section 4.6 provides a detailed discussion of NA methodology, mechanisms, effectiveness for remediation, potential of enhanced attenuation technologies, and natural attenuation monitoring. Based on this information, combined with site specific data (20 ft min. separation distance, groundwater flow, estimated groundwater velocity and travel times, leachate quality, ambient water quality, and estimated mass emission rates) and the indications that C&D leachate has less capacity to cause environmental impacts (when compared to MSW leachate), it suggests the proposed site is suitable for use as an unlined C&D landfill.

The ambient groundwater shows oxidizing conditions (high DO and ORP; potential for aerobic biodegradation) with adequate concentrations of iron and manganese for potential anaerobic biodegradation. There is adequate potential for leachate dilution when mixed with ambient groundwater and the NA mechanisms (adsorption, cation/anion exhchange, dilution, biological uptake, filtration, precipitation, volatilization) operating within the proposed 20 foot unsaturated separation zone will assist in reducing potential leachate concentration/mass. Leachate is typically strongly reduced, rich in organic matter and ammonium and provides a capacity for donating electrons during redox reactions. This results in a sequence of redox zones (methanogenic, sulfate-reducing, iron-reducing, manganese and nitrate reducing) in groundwater that assists in leachate immobilization and/or reduction in leachate concentration/mass. The redox potential generally increases with distance away from the landfill.

It is important to note that the leachate quality data presented in this variance is from MSW landfills and therefore presents potentially higher leachate concentrations compared to typical leachate from a properly operated C&D landfill.

A groundwater monitoring network will be installed at the proposed landfill with a long-term monitoring plan implemented to monitor the groundwater occurrence, quality, and ability to detect potential impacts related to the proposed landfill facility. The groundwater monitoring network will also provide regulators with an adequate NA monitoring system to detect changes in NA key constituents to decide if NA is meeting site objectives and to verify that there are no changes in conditions affecting NA. A detection system for early warning of impacts to sensitive receptors, such as drinking water wells, may be provided. In the event of groundwater impacts, plans may also be developed for contingency remedial efforts (e.g. enhanced attenuation technologies) that can be implemented if NA processes do not meet expectations.

7. COMMENT: *Text on Section 4.4.1 pages 4-10 and 4-11 need to be revised to use a DAF of 1 instead of DAF = 10 to be consistent the WDEQ's Voluntary Remediation Program unless supported by site specific information.*

   RESPONSE: Text and associated tables have been revised and are included in Section 4.6.3 to use a DAF = 1.0 (WDEQ conservative value), However, the text notes the potential for higher DAF values based on other screening guidance documents (already referenced in text) for additional information.

8. COMMENT: *It is necessary to include a discussion of CD leachate and the potential for the unlined CD area to impact groundwater. In addition, the variance application needs to include a detailed description of the waste screening procedures that will be used to ensure that only acceptable waste is disposed in the CD area.*

   RESPONSE: A discussion of the proposed groundwater monitoring network that will be installed to monitor any effects of C&D leachate can be found in Section 2.5.4.

A description of the waste screening procedures used to ensure only acceptable waste is disposed in the C&D area are included in Section 2.5.2. The facility will utilize signage to identify acceptable and unacceptable waste, will observe loads from the scalehouse, and will perform random load inspections.

9. COMMENT: *Text on page 4-11 includes discussion of the organic carbon content of the Wasatch Formation as noted from a previous report of the old landfill, however after WDEQ review it seems the information in the old landfill report overstates the presence of total organic carbon and the related potential sorptive capacity to retard contamination migration.*

   RESPONSE: Revised text in Section 4.6.3 "Case Study" mentions the overstated values of organic carbon reported from an EnviroGroup investigation (2008) at the old City of Sheridan landfill. The values are actually closer to the WDEQ stated conservative values of TOC for fate and transport modeling calculations (0.1%), and the EPA's value of 0.2%.

10. COMMENT: *Text on page 4-12 needs to be revised to include discussion of the natural attenuation mechanisms for conventional pollutants in CD leachate that can cause groundwater impacts, such as sulfate, chloride, ammonia, nitrate, etc.*

    RESPONSE: Section 4.6 provides a detailed discussion of NA methodology, mechanisms, effectiveness for remediation, potential of enhanced attenuation technologies, and natural attenuation monitoring. Table 4-15 provides the major natural attenuation mechanisms of landfill leachate constituents.

    Ambient water and leachate quality discussions were added to Section 4.0 along with a comparison of the leachate and ambient water quality.

    Text has been added in Section 4.6 to indicate the different conditions between the former landfill site and the proposed landfill expansion area (saturated waste vs. unsaturated waste; anaerobic vs. aerobic conditions).

11. COMMENT: *Include discussion of the amount of leachate generated to date from Cell 9.*

    RESPONSE: A summary of the June 2009-June 2010 flow readings from the City of Sheridan Landfill Cell 9 is provided in Table 4-13. Also displayed is precipitation data that reflects the strong correlation of the leachate flow to precipitation.

12. COMMENT: *Revise text in Section 5.1 Analysis of Potential Receptors to include discussion of how groundwater from the Wasatch Formation is or may be connected to groundwater in alluvial materials.*

    RESPONSE: A discussion of groundwater base flow is provided in Section 4.2.4. Discussed is the relatively minimal contribution to Prairie Dog Creek base flow from the Wasatch Formation due to contrasting subsurface materials, consolidation, and hydraulic

conductivities when compared with the alluvium of the Prairie Dog Creek. The unconsolidated to poorly consolidated alluvium materials provide higher hydraulic conductivities and increased potential of recharge to nearby wells and Prairie Dog Creek compared with the more consolidated clays/shales of the Wasatch Formation.

13. COMMENT: *The variance application needs to address the potential for impacts from the proposed unlined CD disposal area.*

RESPONSE: As mentioned above, more information can be found in Section 2.5.4 and Chapter 4.0.

CHAPTER 1, SECTION 2 (i)(i)(C)

1. COMMENT: *Revise text as necessary regarding lifetime volume calculations and site capacity.*

RESPONSE: The lifetime volume calculations in Appendix B have been revised to include two scenarios, as discussed with WDEQ on June 17, 2010. The first scenario includes accepting waste from only Sheridan County and the second includes a theoretical situation - accepting waste from Sheridan, Weston, and Crook Counties. The text in Section 2.0 of the Variance has been revised to include discussion of both scenarios.

CHAPTER 1, SECTION 2 (i)(i)(C)

1. COMMENT: *Variance request needs to be revised to include an expanded discussion of possible alternative locations.*

RESPONSE: A discussion of possible alternative landfill locations has been expanded to include all of Sheridan County, Wyoming, and is provided in Section 5.2. Additional geographic information system (GIS) maps were created (found in Appendix L) to display the restricted and non-restricted areas in Sheridan County for possible landfill development based on state regulated site location restrictions. Approximately 6.5% of Sheridan County is available for alternative landfill development based on the location restriction screening criteria (165 square miles out of 2527 square miles).

State highways are also indicated on these GIS maps. As shown on the maps, the majority of land area available for landfill development is not directly adjacent to state highways. The majority of the County roads are not designed to support the traffic associated with a landfill. The lack of available improved roads to the areas potentially available for landfill development likely represents a significant additional development cost that the solid waste rate would be required to finance.

2. *COMMENT: The City will need to provide a more detailed analysis and documentation regarding the potential to use other currently permitted disposal facilities. A more detailed evaluation is needed to support conclusions that operating a lined landfill at the proposed location is more cost-effective than transporting waste to another facility.*

   RESPONSE: Haul costs calculated by Burns & McDonnell in the original Variance document correspond to what other consultants across the state of Wyoming have found - $0.19 to $0.25 per ton-mile (according to DEQ's full-text comment). As concluded in the 2009 ISWMP, a haul distance of 50 miles would result in an increase of approximately $11.50 per ton, or $0.23 per ton-mile (transportation only). A haul distance of 150 miles results in an increase of approximately $29 per ton, or $0.19 per ton-mile. This value only includes costs associated with waste transportation, as shown in the calculations included in Appendix K. The nominal savings resulting from ceasing MSW landfill operations at the existing landfill would be negated due to the debt of service associated with building a transfer station, transfer station operations, continuing to fund the closure and post-closure of the existing MSW landfill, and the unknown tipping fee at the landfill receiving the waste. Therefore, as found in the ISWMP, is economically unjustifiable to haul waste to the existing permitted facilities.

   Existing landfill facilities that could potentially accept the current waste currently received by the City's landfill include Campbell County, Billings, Montana, and the City of Casper, which are approximately 103, 135, and 148 miles from the City's existing landfill, respectively. A letter documenting the City of Billings unwillingness to accept the waste is included in Appendix K. At this time, Campbell County does not have the capacity to process the significant tonnage that Sheridan would be transporting, and because of this limitation, is not a reliable viable option for the City to transport waste to. Additionally, hauling waste to Campbell County is cost prohibitive.

3. *COMMENT: The Department is not in complete agreement with the second bulleted point on page 5-3 that an unlined CD landfill would not pose an environmental risk. Additional assessment of this subject is necessary.*

   RESPONSE: The text was edited to state that although the proposed unlined C&D landfill may pose a potential impact to groundwater, C&D leachate when compared with MSW leachate has less capacity to cause environmental impacts when improperly managed. By implementing routine C&D waste screening, 20 foot minimum groundwater-waste separation distance, proper landfill operating procedures, presence of natural attenuation mechanisms beneath the facility, providing a groundwater monitoring network, and the availability of potential contingency remedial efforts (enhanced and monitored attenuation technologies), the risk of impacting human health and environment will be reduced.

   Text was also revised to state that with proper operation of the properly designed and constructed lined MSW landfill at the proposed expansion would be protective of human health, safety, welfare, and environment.

Comments on Site Location Restriction Demonstration

The comments in this section were addressed; however, the revised Site Location Restriction Demonstration is not included herewith. The revised document will be submitted to DEQ with the proposed landfill permit application, pending approval of the revised Variance Request.

1. COMMENT: *Text on page 2-1 states that the property is currently owned by the County. Revise text to indicate the property is in the county, but will be annexed.*

   RESPONSE: Text on page 2-1 has been revised to indicate the property is located outside of City limits, but will be annexed.

2. COMMENT: *The archeological report referenced on page 2-4 will need to be included with the permit application when the entire document is submitted.*

   RESPONSE: Text has been revised on page 2-4 to include the Class III Cultural Resources Survey that was performed in March 2010. No archaeological resources were encountered during the survey and cultural resource clearance was recommended. The Class III cultural survey report is provided in Appendix K.

3. COMMENT: *The landfill permit application will need to demonstrate compliance with the Governor's executive order regarding sage grouse habitat.*

   RESPONSE: A GIS figure was created showing an aerial photograph of the proposed landfill area with an overlay of the sage grouse distribution area. The figure is located in Appendix M.

4. COMMENT: *The third bullet on page 3-1 lists Distance to Drinking Water sources as meeting the applicable location standard, however the proposed expansion location does not appear to meet this location standard, so it should be included on the list.*

   RESPONSE: The bullet regarding the "Distance to Drinking Water Sources" was deleted since it did not meet the applicable location standard.

Burns & McDonnell appreciates your timely review of the Revised Variance Request for Proposed MSW and C&D Landfill Development in Sheridan, Wyoming, and we trust the information and documentation included herewith meets WDEQ requirements. Please contact Brandy Kean at 816-349-6730 if you have any questions or comments.

Sincerely,

Brandy Kean
Project Manager

Christopher J. Snider, PE, RG
Associate

Cc: Mr. Charles Martineau, Solid Waste Manager, City of Sheridan
Mr. Dan Miller, Utilities Director, City of Sheridan (letter only)

Variance Request

Proposed MSW and C&D Landfill Development

for

Received
SEP 09 2010
Casper DEQ

City of Sheridan, Wyoming

Project Number 49341

September 2010

Burns & McDonnell
SINCE 1898

The State
of Wyoming

Department of Environmental Quality

Dave Freudenthal, Governor

John Corra, Director

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

November 1, 2010

Mr. Charles Martineau
Solid Waste Manager
P. O. Box 848
Sheridan, WY 82801

RE: Comments on the revised draft variance request for proposed municipal solid waste landfill expansion, City of Sheridan landfill, SHWD File #10.526

Dear Mr. Martineau:

The Wyoming Department of Environmental Quality, Solid and Hazardous Waste Division (Department) received a revised Variance Request for the above referenced facility dated August 2010, received by the Department on September 2, 2010. The document was submitted by Burns & McDonnell on behalf of the City of Sheridan.

The City of Sheridan's revised Variance Request has been evaluated for compliance with SW Chapter 1 Section 2(i) for variance applications. While most of the Department's comments were addressed, there are still a few areas where revisions or additional supporting documentation is needed. The Department's comments and observations are provided below.

1. The introduction states that the City of Sheridan intends to permit both a construction and demolition (CD) landfill and a municipal solid waste (MSW) landfill on property south of the current Sheridan landfill. To clarify, there will be one permit for the expansion with an area for unlined CD disposal and a lined area for MSW disposal. There will not be two permitted facilities.

2. Text on page 2-2 of the variance request proposes a 12 acre overlap for CD disposal on top of the proposed lined MSW disposal area and a 9 acre overlap of lined MSW disposal on top of MSW cells T-6, T-7 and T-8 in the existing landfill. The Department will not agree to any overlap onto these cells that would cover the active gas extraction system that has been installed in this area to address both an explosive gas issue and groundwater contamination. The Department notes that the original variance request did not include the proposed overlap onto these cells. **The text and estimated life calculations will need to be revised to discuss the variance without the overlap onto existing MSW cells over top of the gas extraction system.**

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WATER QUALITY DIVISION
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3. **Supporting documentation needs to be added to the variance request. Specifically, the following additional information is needed:**

- **laboratory data sheets for all samples collected from the wells in the proposed expansion area need to be included in the variance request.**

- **text of the conditional use permit for the well mentioned in text will need to be provided. The variance request states that the conditional use permit will expire when the landfill begins operations, but documentation supporting this observation was not included.**

In summary, the Department has determined the August 2010 draft variance application submitted by Burns and McDonnell on behalf of the City of Sheridan, has not adequately addressed all of the requirements listed under Chapter I, Section 2(i), of the Wyoming Solid Waste Management Rules and Regulations. On that basis, the Department is unable to approve the variance request at this time, but is not denying the variance request.

If the City desires, change pages may be submitted to incorporate additional information to address the above comments. Should the City desire, Department staff would be glad to meet with City personnel and the City's consultant to discuss outstanding issues. If you have any questions, please feel free to contact me at (307) 473-3462.

Sincerely,

Carol Stark

Carol Stark, CHMM
Natural Resources Analyst
Solid Waste Permitting and Corrective Action Program

Cc: Dale Anderson ☞ Casper SHWD File # 10.526
Tim Moe ☞ Sheridan SHWD File # 10.526
Cheyenne SHWD File # 10.526
Brandy Kean, 9400 Ward Parkway, Kansas City, Missouri 64114

Burns & McDonnell
SINCE 1898

November 9, 2010

Ms. Carol Stark
Natural Resources Analyst
Wyoming Department of Environmental Quality - SHWD
152 N. Durbin Street, Suite 100
Casper, Wyoming 82601

NOV 12 2010

Re: Variance Request – Proposed Landfill Expansion
City of Sheridan Landfill, SHWD File #10.526
Burns & McDonnell Project Number 49341

Dear Ms. Stark:

On behalf of the City of Sheridan, Wyoming, Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) is pleased to provide this response to the comment letter provided by the Wyoming Department of Environmental Quality (WDEQ), dated November 1, 2010. The WDEQ comment letter was in response to the Revised Variance Request for the Proposed MSW and C&D Landfill Expansion (Variance), dated September 2010. Listed below are WDEQ's comments followed by Burns & McDonnell's responses. Replacement pages for the sections identified below are included herewith.

1. *Comment: The introduction states that the City of Sheridan intends to permit both a construction and demolition (CD) landfill and municipal solid waste (MSW) landfill on property south of the current Sheridan landfill. To clarify, there will be one permit for the expansion with an area for unlined CD disposal and a lined area for MSW disposal. There will not be two permitted facilities.*

   Response: The following sentence has been added to the end of Section 1.1, first paragraph: "Following approval of this Variance Request, the proposed MSW and C&D landfills will be permitted with the Wyoming Department of Environmental Quality (WDEQ) by amending the existing City of Sheridan landfill permit."

2. *Comment: Text on page 2-2 of the variance request proposes a 12 acre overlap for CD disposal on top of the proposed lined MSW disposal area and a 9 acre overlap of the lined MSW disposal on top of the MSW cells T-6, T-7, and T-8 in the existing landfill. The Department will not agree to any overlap onto these cell that would cover the active landfill gas extraction system that has been installed in this area to address both an explosive gas issue and groundwater contamination. The Department notes that the original variance request did not include the proposed overlap onto these cells. The text and estimated life calculations will need to be revised to discuss the variance without the overlap onto existing MSW cells over top the gas extraction system.*

   Response: The proposed overlap of the proposed MSW landfill onto existing MSW cells T-6, T-7, and T-8 was discussed in a conference call between WDEQ and Burns & McDonnell on Friday, November 5, 2010. As noted on the call, new text regarding the overlap was included in the revised Variance submittal after Burns & McDonnell completed additional conceptual design

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DEQ Exhibit 5

following WDEQ's initial comment letter. The need to preserve the airspace in the overlap area was identified during this additional conceptual design effort.

WDEQ and Burns & McDonnell agreed in the conference call the text and estimated life calculations would remain unchanged in the Variance Request. Appropriate design documentation will be submitted with the permit amendment when the City pursues the proposed MSW expansion. Although included in the Variance, the City of Sheridan and Burns & McDonnell understand the overlap will need to consider the necessary technical issues associated with the overlap engineering design and the existing landfill gas control system, which is within the overlap area. The permit amendment will include both a stand-alone and overlap landfill scenario. The overlap design may be included and addressed in the permit amendment at the conceptual level.

3. *Comment: Supporting documentation needs to be added to the variance request. Specifically, the following additional information is needed:*
   - *Laboratory data sheets for all samples collected from the wells in the proposed expansion area need to be included in the variance request.*
   - *Text of the conditional use permit for the well mentioned in the text will need to be provided. The variance states that the conditional use permit will expire when the landfill begins operations, but documentation supporting this observation was not included.*

Response: Laboratory data sheets for the samples collected from the wells in the proposed expansion area are included herewith and should replace the documents in Appendix I – Ambient Groundwater Quality Laboratory Reports.

The Conditional Use Permit for the groundwater well located at 170 East Ridge Road is enclosed. Please insert the CUP at the end of Appendix E – Distance to Drinking Water Sources.

Burns & McDonnell appreciates your timely review of the replacement pages for the Variance Request for Proposed MSW and C&D Landfill Development in Sheridan, Wyoming, and we trust this information and documentation meets WDEQ's request. Please contact Brandy Kean at 816-349-6730 if you have any questions or comments.

Sincerely,

Brandy Kean
Project Manager

Christopher J. Snider, PE, RG
Associate

Enclosures: Replacement Pages
Chapter 1 – Introduction (replace existing Chapter 1)
Laboratory Data Sheets (replace existing Appendix I)
Conditional Use Permit (insert at the end of Appendix E)

Cc: Mr. Charles Martineau, Solid Waste Manager, City of Sheridan
Mr. Jason Baker, Engineering Project Manager, City of Sheridan
Mr. Dale Anderson, Program Principal, WDEQ (letter only)

November 30, 2010

Certified# 7007 0710 0000 3817 6830
Return Receipt Requested

Mayor David Kinskey
City of Sheridan
55 Grinnell Plaza
Sheridan, WY 82801

RE: Final variance application review, proposed expansion of the Sheridan landfill, SHWD File # 10.526

Dear Mayor Kinskey:

The Department of Environmental Quality, Solid and Hazardous Waste Division received a variance application for a proposed expansion of the Sheridan landfill on December 30, 2009. The variance request was submitted by Burns & McDonnell on behalf of the City of Sheridan. On March 31, 2010 the Department responded with a request for additional information. Additional information was provided by Burns & McDonnell in correspondence dated September 8, 2010, received September 9, 2010. On November 1, 2010 the Department responded with a second request for additional information. The second response with additional information was provided by Burns & McDonnell in correspondence dated November 9, 2010 and received November 12, 2010.

The City of Sheridan has proposed an expansion of the Sheridan landfill in order to provide for additional landfill capacity of the existing municipal solid waste landfill. The existing Sheridan landfill is expected to be filled in 2017. The lateral expansion would provide additional landfill capacity for the disposal of municipal solid waste (MSW) and construction and demolition (CD) waste. The proposed expansion would increase the size of the existing facility from approximately 120 acres to 200 acres. However, the lateral expansion does not comply with the following location standards in Chapter 2, Section 3(a) of the Solid Waste Rules and Regulations:

> *(iii) Distance to residences and other buildings: Except upon a variance granted by the director in accord with W.S. 35-11-502(c) no facility greater than one (1) acre is size shall be located... between 1,000 feet and one (1) mile of an occupied dwelling house except the written consent of the owner.*
>
> *(v) Distance to drinking water sources: Except upon a variance granted by the director in accord with W, S, 35-11-502(c), no facility greater than one (1) acre in size shall be located between 1,000 feet and one-half (1/2) mile of a water well permitted or certificated for domestic or stock watering purposes except with written consent of the owner of the permit or certificate.*

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ABANDONED MINES (307) 777-6145
AIR QUALITY (307) 777-7391
INDUSTRIAL SITING (307) 777-7369
LAND QUALITY (307) 777-7756
SOLID & HAZ. WASTE (307) 777-7752
WATER QUALITY (307) 777-7781

(xvi) Distance from incorporated cities or towns: Except upon a variance granted by the Director in accord with W.S. 35-11-502(c), no facility greater than one acre in size shall be located within one (1) mile of the boundaries of an incorporated city or town.

The Department has reviewed the variance application and additional information that was submitted and has determined that it is complete and adequately addresses each issue. Based on this review and in accordance with Wyoming Statute 35-11-601(a), the following procedures must be accomplished before a variance for the proposed facility may be granted:

- The Department and the City of Sheridan must schedule a public hearing.

- The City must publish a notice (text enclosed) in a newspaper of general circulation in Sheridan County once a week for four (4) consecutive weeks prior to the date of the hearing. The public notice indicates that the City of Sheridan has applied for a variance, the nature of the variance requested, and the time and place of the hearing. The cost of publication is the responsibility of the City of Sheridan.

- Copies of the final Variance Request and the Department's reviews of the request must be provided to the Sheridan County Clerk's office and Sheridan County Library for public viewing per the enclosed legal notice. The Casper DEQ office has a copy of the Variance Request which can also be used for public viewing.

- The final Variance Request will need to be revised to include an original USGS topographic map showing the existing facility and the proposed expansion. Please provide one copy of the map along with any necessary change pages such as a revised table of contents, etc. to the attention of Solid and Hazardous Waste Division staff in our Casper office. Two additional copies of the map and necessary change pages will need to be inserted into the final Variance Request prior to the document being made available for public review.

- Two copies of the City's final Variance Request must be provided to the Department. The final two copies may be the two copies placed on record for public review during the public notice period. Please mail the two copies to the attention of Solid and Hazardous Waste Division staff in our Casper office.

- The Solid and Hazardous Waste Division administrator will investigate the request, consider the views of the persons who may be affected by the granting of the variance, and all facts bearing on the request, and make a decision with the approval of the director within sixty (60) days from the date the hearing for a variance is held.

If, within thirty (30) days after the final publication of the public hearing notice described above, an aggrieved party submits a written request for a hearing before the Environmental Quality Council (EQC), the administrator's decision will be stayed pending the EQC's final determination.

A copy of the Department's review comments dated March 31, 2010 and November 29, 2010 are enclosed for your records. The Department will contact you shortly to discuss a date, time, and location for the public hearing. If you have any questions on this matter or on the variance application process, please feel free to call Dale Anderson at (307) 473-3472 or Carol Stark at (307) 473-3462.

Sincerely,

Carl Anderson, Ph.D.
Administrator
Solid & Hazardous Waste Division

encl. : Public Notice Text
DEQ November 29, 2010 memo to file, comments on revised variance request
DEQ March 31, 2010 comments on first variance request submittal

Copy : Mr. Charles Martineau, Solid Waste Manager, City of Sheridan, P. O. Box 848, Sheridan, WY 82801
Brandy Kean, 9400 Ward Parkway, Kansas City, Missouri 64114 (w/encls.)
Carol Stark ☞ Dale Anderson ☞ Casper SHWD File # 10.526 (w/encls.)
Tim Moe ☞ Sheridan SHWD File # 10.526 (w/encls.)
Cheyenne SHWD File # 10.526 (w/encls.)

MEMORANDUM

To: SHWD File # 10.526, Sheridan landfill

From: Dale Anderson

Date: November 30, 2010

RE: Final review of variance request

On December 31, 2009 the Department received a variance request from the City of Sheridan. The variance request was dated December 30, 2009. The variance request was submitted by Burns & McDonnell on behalf of the City of Sheridan. On March 31, 2010 the Department responded with comments, and requested additional information. Additional information was provided by Burns & McDonnell in correspondence and a revised variance application dated September 8, 2010, received September 9, 2010. On November 1, 2010 the Department responded with a second request for additional information. The second response with additional information was provided by Burns & McDonnell in correspondence dated November 9, 2010, received November 12, 2010.

As described on page 1, a variance is needed because a proposed expansion of approximately 102 acres to the existing Sheridan landfill does not meet three of the location standards identified in SW Chapter 2 Section 3(a). The three location standards in question are:

> *1. SW Chapter 2 Section3(a)(iii): Distance to residences and other buildings: Except upon a variance granted by the director in accord with W.S. 35-11-502(c), no facility greater than one (1) acre in size shall be located ... between 1,000 feet and one (1) mile of an occupied dwelling house except with the written consent of the owner. Additionally, facilities of any size shall not be located within 1,000 feet of any occupied dwelling house, school or hospital, and shall not be located within 300 feet of any building unless provisions have been made for protection from methane gas accumulation.*
>
> *2. SW Chapter 2 Section3(a)(v): Distance to drinking water sources: Except upon a variance granted by the director in accord with W.S. 35-11-502(c), no facility greater than one (1) acre in size shall be located between 1,000 feet and one-half (½) mile of a water well permitted or certificated for domestic or stock watering purposes except with written consent of the owner of the permit or certificate. Additionally, facilities of any size shall not be located within 1,000 feet of any drinking water source such as a well or surface water intake.*
>
> *3. SW Chapter 2 Section3(a)(xvi): Distance from incorporated cities or towns: Except upon a variance granted by the director in accord with W.S. 35-11-502(c), no facility greater than one (1) acre in size shall be located within one (1) mile of the boundaries of an incorporated city or town.*

The variance application, and information subsequently provided as described above, was reviewed for compliance with the requirements for variances per SW Chapter 1 Section 2(i) as described below: For convenience, the regulatory language is provided in italicized font, followed by review comments on the information that addresses each topic.

(i) Variance application procedure for location standards specified in W.S. 35-11-502(c):

(i) For solid waste disposal facilities which do not meet the location standards specified in paragraphs (i) through (iv) of W.S. 35-11-502(c), the applicant may apply to the director for a variance from the standards by submitting a written variance application. The variance application shall contain the following information:

(A) For proposed facilities which do not meet the location standards for proximity to towns, schools or any occupied dwelling house in W.S. 35-11-502(c)(i) or (ii), the applicant shall:

(I) Present an analysis of additional traffic which would result from the proposed facility, and demonstrate that additional traffic caused by operation of a disposal facility will not pose a safety threat to the public;

Review Comment: Complete; technically adequate. See page 3-1 and 3-2, and Appendix C of the City's September 8, 2010 variance request. Because the proposed expansion area is located adjacent to the existing landfill an increase in traffic is not expected beyond what would occur due to normal growth. The City has provided information regarding what may occur if the facility's service area was expanded; however, no service area expansion is contemplated at this time.

(II) Demonstrate that the operation of the proposed facility will not present odor, dust, litter, insect, noise, health (human and animal) or aesthetic problems, and will not present a public nuisance by its proximity to the town, schools and/or dwellings. This demonstration may be made through analysis of the facility design and operation practices; and

Review Comment: Complete; technically adequate. See page 3-2 of the City's September 8, 2010 variance request. As noted in section 3.1.2 of the variance application, the operations plan for the proposed expansion will be similar to the existing landfill and will address any issues so as not to present any odor, dust, litter, insect, noise, health (human and animal) or aesthetic problems. As noted in the variance request, daily cover of the municipal solid waste (MSW) landfill and monthly cover of the CD landfill and confining the working faces to the smallest extent possible will adequately limit the potential for these issues. In addition, a litter control program will be implemented at the proposed facility.

(III) Provide design features and monitoring specifications used to preclude methane migration from affecting any buildings within one (1) mile of the proposed facility, if the facility is used for the disposal of wastes which may form methane as a decomposition product.

Review Comment: Complete; technically adequate. See page 3-2 of the City's September 8, 2010 variance request. In addition to information in the text regarding methane monitoring, the MSW disposal area, which has the highest potential for causing a methane problem, will be constructed with an ECS. The ECS will serve to prevent the migration of methane in the subsurface by means of

the plastic liner.

(C) For proposed facilities, excluding incinerators, which do not meet the location standard for proximity to water wells in W.S. 35-11-502 (c)(iv), the applicant shall provide:

(I) A detailed description of the site's geologic and hydrologic characteristics, supported by data from on-site soil borings and groundwater monitoring wells;

Review Comment: Complete; technically adequate. See pages 4-1 through 4-8, Figure 4-3, Tables 4-2, and 4-5 through 4-7, and Appendix G of the City's September 8, 2010 variance request. There are currently six wells in the expansion area; subsurface investigation work is ongoing. Data from these six wells was presented as was information from the existing landfill that is immediately adjacent to the proposed expansion. Groundwater velocities may vary greatly depending on conditions at any one location. The variance request indicates that a representative site-wide scenario using average values indicates a travel time of approximately 60 years to the nearest downgradient well identified in the variance request. Using the most conservative (fastest travel time) values, a travel time of approximately three to seven years was identified.

(II) A detailed description of the proposed facility's containment system (cap and liner systems) and surface water diversion structures;

Review Comment: Complete; technically adequate. See pages 2-6 and 2-7 of the City's September 8, 2010 variance request. The MSW disposal area will be constructed with an engineered containment system (ECS) with leachate collection. The construction/demolition (CD) landfill area is proposed to be unlined, with waste screening to prevent disposal of unacceptable materials in the unlined CD disposal area. Surface water diversion structures will be constructed to prevent surface water run-on and run-off. A minimum twenty foot separation distance between the base of the unlined CD area and the water table surface will be maintained in order to aid in attenuating any release that may occur from this unlined area.

(III) A detailed description of the groundwater monitoring program (including location of wells, sampling frequency and sampling parameters) which would be instituted when the facility begins operations; and

Review Comment: Complete; technically adequate. See page 4-8 of the City's September 8, 2010 variance request document. Groundwater monitoring will be required for both disposal areas in the proposed expansion area.

(IV) An analysis of the potential for contaminants which may leak from the disposal facility to adversely affect the nearby water well(s). This analysis may be in the form of contaminant transport modeling results, an evaluation of hydrologic conditions or aquifer properties, or other applicable information.

Review Comment: Complete; technically adequate. See pages 4-10 to 4-29 of the City's September 8, 2010 variance request document. As noted above, the MSW disposal area will be constructed with an ECS with leachate collection; the CD disposal area is proposed to be unlined with waste screening to prevent disposal of unacceptable wastes in unlined areas. Information in the variance application indicates that natural attenuation processes offer effective mechanisms for attenuating any release of leachate to acceptable concentrations.

Regarding the potential for the unlined CD area to impact groundwater, the variance request states on page 5-4:

> "Although the proposed unlined C&D landfill may pose a potential impact to groundwater, C&D leachate has less capacity to cause environmental impacts than MSW leachate. By implementing the proposed routine C&D waste screening, 20 foot minimum groundwater-waste separation distance, proper operating procedures, presence of natural attenuation mechanisms beneath the facility, groundwater and natural attenuation monitoring network, and the availability of potential contingency remedial efforts (enhance attenuation technologies), these efforts will reduce the risk of impacting human heath and the environment."

Also, the variance request indicates that a representative site-wide groundwater travel time to the nearest well, using average values, would be approximately 60 years to the nearest downgradient well identified in the variance request. Using the most conservative (fastest travel time) values, a travel time of approximately three to seven years was identified.

(D) In addition to the other information requested in this subsection, all variance applications made under this subsection shall be accompanied by the following information:

(I) The proposed size of the facility;

Review Comment: Complete; technically adequate. See page 2-2 of the City's September 8, 2010 variance request document. The variance request indicates that the entire footprint of the proposed expansion would be approximately 102 acres. Of this, approximately 51 acres would be used for the proposed MSW expansion area and 29 acres for the CD disposal.

Approximately 9 of the 51 acres for MSW disposal are a proposed overlap onto existing unlined waste at the existing facility, in the area of T-6, T-7, and T-8. Of the 29 acres for CD disposal approximately 12 acres would be an overlap onto MSW disposal. Thus, the approximately footprint of unlined CD disposal would be approximately 17 acres. By comparison, the currently permitted facility is approximately 120 acres in size.

(II) The name, address, and telephone number of the applicant;

Review Comment: Complete; technically adequate. See pages 2-2 and 2-3 of the City's September 8, 2010 variance request document.

(III) The legal description of the property;

Review Comment: Complete; technically adequate. See pages 2-1 through 2-3 and Appendix A of the City's September 8, 2010 variance request document.

(IV) A detailed description of the facility which includes information on the amount, rate (tons per day), type (including chemical analyses if other than household refuse) and source of incoming wastes, a narrative describing the facility operating procedures, and the estimated site capacity and site life;

Review Comment: Complete; technically adequate. See pages 2-3 through 2-6 and Appendix B of the City's September 8, 2010 variance request. The variance request includes life calculations for the facility both with the existing service area, and for a scenario in which the service area is expanded. If the facility only accepts waste from the current service area the projected life is approximately 34 years for the CD disposal area and 44 years for the MSW disposal area. If the service area is expanded at some point in the future to take waste from Crook and Weston Counties, the project life of the proposed expansion is approximately 28 years for the CD waste disposal area and 39 years for the MSW disposal area.

(V) The names and addresses of the property owners of all lands within one (1) mile of the proposed facility boundary;

Review Comment: Complete; technically adequate. See page 2-8 and Appendix C of the City's September 8, 2010 variance request.

(VI) A USGS topographic map (scale of 1:24,000 or 1: 62,500) which shows the boundaries of the proposed landfill site; and

Review Comment: Complete; technically adequate provided the City agrees to provide a USGS topographic map (scale of 1:24,000 or 1:62,500) which shows the boundaries of the proposed landfill site. A scale of 1:24,000 is preferred in order to allow users to identify details.

(VII) Information sufficient to evaluate the conditions specified in paragraph (i)(ii) of this section.

Review Comment: SEE BELOW.

(ii) In granting any variance as provided by this paragraph, the director shall issue written findings that the variance will not injure or threaten to injure the public health, safety, or welfare. The director shall only make such a finding if the evidence presented in the application and obtained at a public hearing demonstrates that:

(A) There are no available alternative locations which meet the location standards for a solid waste management disposal facility to meet the disposal needs of the applicant, within a reasonable distance of the boundary of the service area of the facility;

Review Comment: Complete; technically adequate. See pages 5-2 and 5-3 and Appendix J of the City's September 8, 2010 variance request. The City's written variance request states that two alternative landfill locations northwest of the City of Sheridan were identified in the City's October 2001 Solid Waste Management plan (HKM, 2001).These two locations are located on property owned by the Bureau of Land Management (BLM), and both properties would require procurement by the City. These areas can be found in Appendix J. It is currently unknown whether the identified sites' current surface water drainage patterns would allow for landfill development, as USGS topography is the most detailed information available. No site-specific hydrogeologic information is currently available for the two identified sites. In addition to the unknowns stated above, both areas are currently protected by the U.S. Fish and Wildlife Service as core sage grouse habitat areas (See Appendix J). For the record, the Department believes this text should indicate the Wyoming Game and Fish Department per the Governor's Executive Order, rather than the U.S. Fish and Wildlife Service.

The above referenced preliminary search of alternative landfill locations was subsequently expanded to include all of Sheridan County. Based on an evaluation of several of the location standards for siting a potential new landfill location (e.g. distance from airports, schools, cities/towns, roads, parks, streams, flood plains, wetlands, sage grouse, etc.), approximately 6.5% of the county (or 165 square miles out of 2,527 square miles) is not immediately eliminated from development (or, 93.5 % of the county is eliminated for consideration without obtaining one or more variances from location standards). Much of the 6.5 % of the available area is located near the base of the Big Horn Mountains, as depicted on a series of siting maps found in Appendix J. No site-specific hydrogeologic information is currently available for these areas. None of the property identified is currently owned by the City, and it is unknown if the City would be able to acquire any of these properties. The variance request indicates that a majority of these areas are located some distance from current improved roadways, land procurement and significant infrastructure would be required for site access and utilities.

(B) It is not possible for the applicant to use existing, permitted solid waste management disposal facilities owned by another person within a reasonable distance of the boundary of the service area of the facility; and

Review Comment: Complete; technically adequate. See pages 5-3 and 5-4 of the City's September 8, 2010 variance request. The City evaluated transporting their waste to permitted landfills in Billings, MT, Gillette, WY and Casper, WY in the City's Integrated Solid Waste Management Plan (Burns and McDonnell, 2009). The written variance application includes a letter from the City of Billings, MT stating that they are unwilling to accept Sheridan's waste.

Information was provided indicating that Campbell County's landfill in Gillette, WY does not have the processing capacity to take Sheridan's waste. Also, according to the variance request, it would be cost prohibitive to haul to Campbell County, 135 miles away. Similarly, hauling to the City of Casper was not considered viable as compared to the proposed expansion because it is 148 miles from Sheridan. The revised variance application refers to the 2009 Integrated Solid Waste Management Plan indicating that a haul distance of 150 miles results in an increase of approximately $29 per ton, or $0.19 per ton-mile for transportation costs alone, and does not consider other related issues.

The variance application did not address the possible use of the Buffalo landfill. Department staff did consider this possibility. Department staff believes the Buffalo landfill does not currently have sufficient disposal capacity to provide disposal service to the City of Sheridan to replace the Sheridan landfill. Further, the waste generated by the population served by the Sheridan landfill is approximately 5 times greater than that served by the Buffalo landfill. Department staff believes that the existing infrastructure at the Buffalo landfill is not adequate to serve this additional population.

(C) Special or unique conditions or circumstances apply to the applicant and justify granting the variance.

Review Comment: Complete; technically adequate. See pages 5-4 and 5-5 of the City's September 8, 2010 variance request document.

As stated in the City's variance application, the proposed expansion location is financially desirable and convenient for the citizens of Sheridan. The design of the expansion will be protective of human health, safety, welfare, and the environment. Any other landfill development represents an undue financial burden on the City and solid waste rate payers (citizens).

While not explicitly stated in this section of the variance request, the City does have a substantial investment at the adjacent existing landfill. The City has constructed two scales and scale houses for long term development, lined storm water ponds, a household hazardous waste diversion area, and a citizen's drop-off area for waste as well as city water and sewer service. Together this infrastructure represents a multi-million dollar investment that would not, to the Department's knowledge be present at any new landfill that might be sited.

Draft Findings and Recommendations

(iv) The administrator shall review the variance application and provide his or her draft findings to the director and the applicant within ninety (90) days of the date when the variance application is received, unless a delay is requested by the applicant.

After review of the variance application and discussion with City staff and their consultant, the

Department has determined that the City has undertaken a good faith effort to locate alternative locations and that existing facilities in the area are not willing or are unable to accept the volume of waste from the Sheridan landfill. **Based on all factors involved, including location standard restrictions, distance from town, land availability and access, and cost of moving or replacing existing infrastructure, Department staff's draft recommendation to the Administrator and Director is that granting the requested variance(s) is warranted in this situation.**

Note that this determination does not mean that a permit will be issued for a disposal facility, only that the process of granting a variance from the location standard related to distance to an occupied residence may proceed.

For the record, Department staff note that if the variance request is approved, the approximate 102 acre parcel will become part of the currently permitted Sheridan landfill. However, the proposed capacity represents an estimated maximum capacity for the facility. This capacity is required in order to request a variance; the final capacity cannot exceed the proposed capacity without potentially rendering the variance invalid. The City should not use the estimated design capacity in the variance for any future life calculations, budgeting etc. The actual facility capacity will only be determined after final design details are proposed and approved by the Department.

While the proposed expansion would be incorporated into the existing landfill's footprint, detailed design information will need to be provided to the Department for review and approval prior to any disposal activities occurring. In particular, the variance proposes a piggyback overlap onto unlined disposal areas in the south central portion of the existing facility, in the areas of T-7, T-8, and T-9. This overlap is highly problematic due to the presence of an existing landfill gas extraction system in this area that was installed to address both groundwater and explosive gas issues. However, the Department understands that this portion of the proposed expansion is to be filled last, so it is possible that the groundwater and methane issues will be addressed by the time the overlap is needed and the existing gas system may not be needed. Only for this reason was the Department willing to include the capacity represented by the proposed overlap above existing waste. The City is advised that, in the future, if the existing landfill gas system is still needed, approval of the proposed overlap onto T-6, T-7, and T-8 may not be approved.

Matthew H. Mead, Governor

Department of Environmental Quality

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

John Corra, Director

March 23, 2011

CERTIFIED MAIL 7010 2780 0000 4521 6762
RETURN RECEIPT REQUESTED

Mayor Dave Kinskey
City of Sheridan
55 Grinnell Plaza
Sheridan, WY 82801

MAR 2 8 2011

RE: Director's Decision: Need to further investigate alternative sites for the proposed expansion of the Sheridan landfill, SHWD File # 10.526

Dear Mayor Kinskey:

On December 30, 2009, the City of Sheridan applied for a variance to location standards for a landfill expansion. The variance is needed because the proposed expansion area does not meet location standards for distance to the city limits, domestic or stock watering wells, and the distance to residences or buildings as specified in the Wyoming Environmental Quality Act W.S. §35-11-502 (c)(i) (ii), and (iv), and the Wyoming Solid Waste Rules and Regulations, Chapter 2 Section 3(a)(iii), (v), and (xvi). The Department reviewed the request and on November 30, 2010, sent a final variance application review letter concluding that the application was complete and technically adequate. On January 3, 2011, after Department comments and City revisions, the Department received the final variance request for the proposed expansion of the Sheridan landfill. After the necessary public notice required by Chapter 1 Section 2 (i)(v), the Department held a public hearing regarding the proposed landfill expansion on January 25, 2011. Under W.S. §35-11-502(c), the Director makes the decision on whether to grant the variance. At this time, a final decision on the variance request isn't being made, and the Department is requesting additional information as outlined below.

As a result of the public hearing, the Department received and evaluated a significant number of comments related to the landfill expansion. In addition, the Department looked more closely at potential alternative locations for the landfill, and has concluded there may be other suitable locations within a reasonable distance from the City that may meet the applicable location standards. Possible alternative locations are supported by the map titled County Constraints in Appendix J of the Final Variance document, which highlights areas that are not constrained by location standards.

Based on the above information, the Department is asking the City of Sheridan to conduct a more detailed investigation of alternative landfill locations within a reasonable distance of the

DEQ Exhibit 9

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

ADMIN/OUTREACH	ABANDONED MINES	AIR QUALITY	INDUSTRIAL SITING	LAND QUALITY	SOLID & HAZ. WASTE	WATER QUALITY
(307) 777-7758	(307) 777-6145	(307) 777-7391	(307) 777-7369	(307) 777-7756	(307) 777-7752	(307) 777-7781

City, using the location standards of Chapter 2, Section 3 a (i) thru (xvii). The City is asked to re-evaluate the parcels of land that would be large enough to accommodate a landfill and that meet or may meet location standards. In addition, areas that are shown as constrained need to be carefully reconsidered; during the Department's evaluation it appeared that some areas may have been depicted as not meeting location standards due to inclusion of wells that are permitted for uses other than domestic or stock watering. For example, wells that are permitted as coal bed methane wells that are not specifically permitted or certificated for domestic or stock watering purposes, need to be removed as a constraint issue. Also, please look carefully at constraints due to sage grouse issues, paying close attention to the 2 mile seasonal buffer zone for Greater Sage-Grouse leks.

If you have any questions please telephone Dale Anderson at (307) 473-3472.

Sincerely,

Carl Anderson, Ph.D.
Administrator
Solid and Hazardous Waste Division

John V. Corra
Director
Department of Environmental Quality

Cc: Dale Anderson ☞Carol Stark ☞ Casper SHWD File # 10.526
Tim Moe ☞ Sheridan SHWD File # 10.526
Carl Anderson ☞ Cheyenne SHWD File # 10.526
Charles Martineau, P.O. Box 848, Sheridan, Wyoming 82801
Brandy Kean, 9400 Ward Parkway, Kansas City, Missouri 64114

Burns & McDonnell
SINCE 1898

July 8, 2011

Mr. Carl Anderson, Ph.D.
Administrator
Solid and Hazardous Waste Division
Wyoming Department of Environmental Quality
152 N. Durbin Street Suite 100
Casper, WY 82601

Re: WDEQ Director's Decision Requiring Further Investigation
City of Sheridan Proposed MSW and C&D Landfill Expansion Variance Request
Burns & McDonnell Project No. 49341
WDEQ SHWD File #10.526

Dear Mr. Anderson:

On behalf of the City of Sheridan, Wyoming, Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) is pleased to provide this response to the March 23, 2011 Wyoming Department of Environmental Quality's (WDEQ) letter regarding the proposed municipal solid waste (MSW) and construction and demolition (C&D) landfill expansion variance request. The Final Variance Request for the Proposed MSW and C&D Landfill Expansion (Variance) was submitted to WDEQ on January 3, 2011.

The March 23, 2011 WDEQ letter requested the City conduct a more detailed investigation of alternative landfill locations within a reasonable distance of the City. As part of this investigation, the County Constraints maps in the Variance (Appendix J) were modified to reflect a 2-mile seasonal buffer zone for Greater Sage-Grouse leks and the exclusion of coal bed methane (CBM) wells from the water well restriction map. The revised maps are included in Attachment A of this letter.

Areas that are unconstrained by WDEQ site location restriction criteria are generally located west of the City in the foothills of the Big Horn Mountains and several scattered areas east of the City. Wyoming Solid Waste Rules (WSWR) Chapter 2 Section 3 - Location Standards for wetlands, National Historic Preservation Act, Endangered Species Act, big game winter range breeding grounds, and hydrogeologic conditions were not evaluated when developing the constraints maps in Attachment A due to the site-specific nature of these limitations. These location standards may further eliminate the areas shown as unconstrained in the Appendix A maps.

The additional information contained herein affirms the City has fulfilled the requirements of the Wyoming Solid Waste Rules Chapter 1, Section 2(i)(ii)(A). As WDEQ is aware, landfill siting, investigation, permitting, and construction is a lengthy, multi-year process. The City has proactively approached this process. The City's current landfill is estimated to reach capacity in 2019. Action is imperative, and by prolonging the variance ruling, the City's ability to best serve its citizens is impaired. Burns & McDonnell and the City of Sheridan again ask the WDEQ make a favorable decision on the proposed MSW and C&D landfill expansion variance request.

It is unknown if any of the unconstrained property, whether it be state land parcels or private land, could readily overcome obstacles such as potential public/environmental group/surrounding land owner

opposition, landowners who may not agree to sell their land for landfill use, distance from transportation and utility infrastructure, unfavorable topography consisting of high topographic relief, CBM well purchase and abandonment, and unknown subsurface conditions.

The WDEQ constraint maps in Attachment A were further refined to account for soil suitability, which from a practicality standpoint is a key factor when siting a landfill. To further refine the alternative landfill location search, the soil suitability for sanitary landfill facilities was mapped using the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm) for Sheridan County. Soil types designated as "very limited" or "somewhat limited" for sanitary landfill development by the USDA-NRCS Web Soil Survey are shown in Attachment B. Also included in Attachment B is a revised Sheridan County map showing areas that are not excluded by WDEQ restrictions or USDA-NRCS soil constraints.

The geologic and hydrologic suitably of any site other than the proposed expansion area is unknown and is not accounted for in the USDA-NRCS Web Soil Survey results discussed above. The City has invested significantly and wisely in the historical detailed environmental investigations at the existing and proposed sites. These investigations have resulted in a detailed understanding of the site and the natural physical and chemical processes associated with the landfills in the natural environment. The original City landfill, which began operation in the 1940's, has been monitored and investigated in detail. These investigations have demonstrated that waste in place for approximately sixty years has resulted in relatively minor environmental impacts limited to an area immediately adjacent to the landfill footprint only. The modern landfill engineering practices of today will protect the environment.

Assuming another site could be identified within the County that would meet all of the WDEQ location restrictions, is suitable and practical for development, and faces development opposition that is ultimately overcome, a new site would require land purchase, a more extensive permitting and design effort due to a complete subsurface exploration and full site layout and design, mass earthwork activities due to irregular topography, and the construction of landfill, transportation, and utility infrastructure.

Developing a new landfill in a location other than the site proposed by the City of Sheridan would significantly increase capital development costs, putting undue burden on rate payers. Assuming site acquisition, extensive site characterization, development of a new WDEQ solid waste permit, MSW and C&D landfill construction, new landfill buildings, such as a scalehouse and maintenance building, and utility and transportation infrastructure, a new site at another location could feasibility cost between $12 million to $15 million. If the City is required by WDEQ to pursue a new site, tipping fees have the potential to increase $30 to $40 per ton more than tipping fees if the proposed expansion area were developed.

Access is limited to nearly all locations shown as unconstrained in the figures in Attachment B due to the sites' significant distances from developed roadways. Access road improvement is a significant cost that would be avoided by developing the proposed site. According to recent road project bids received by the City, the base course and asphalt that would be required for transportation from a developed roadway to

the new landfill ranges from $45 to $55 per square yard. One mile of roadway to a new site would cost $792,000 to $968,000. This cost excludes roadway mass earthwork, final grading, drainage considerations, and design and construction administration. Road improvements alone could represent more than one million dollars in development costs that rate payers would be forced to bare.

The cost of waste disposal depends on the distance the waste must be hauled from the waste generators (citizens) to the landfill. The proposed landfills' physical location is desirable because it is within a reasonable proximity to the customers who use it. The proposed landfill development will enable the ratepayers to benefit from the avoided costs associated with remote landfill hauling. As shown in Attachment C, hauling has the potential to significantly impact the landfill tipping fee. A haul distance of 10 miles adds over $4 per ton to the landfill tipping fee. If required to haul 20 miles, the tipping fee is estimated to increase by more than $6 per ton.

The municipal wastewater rates may also be affected if the variance is not allowed because the wastewater treatment plant sludge is hauled to the landfill for composting purposes. Numerous citizens utilize the compost produced at the landfill and these customers enjoy the close proximity of the landfill to the City.

Burns & McDonnell has learned through correspondence with WDEQ staff that WDEQ has identified an area southeast of the existing landfill that WDEQ feels may be suitable for landfill development. The property is currently owned by the State of Wyoming and is located in Township 55N Range 83W. This site was considered for future development, but excluded for the reasons discussed below. The following discussion is typical for other areas that look to be available on the figures in Attachment B.

On April 26, 2011, Burns & McDonnell contacted Dave Fuller at the Wyoming Office of State Lands & Investments (OSLI). According to Mr. Fuller, state land procurement is a multi-step process. If, after a rigorous and lengthy review process, the land is released for sale, the land is appraised according to its highest and best use. The land would then be sold at a public auction to the highest bidder. To Mr. Fuller's knowledge, state land has never been sold for the purpose of landfill development.

On paper, the tract of land identified by WDEQ appears to have great potential for landfill development. However, as with any potential landfill development area noted above, there are several environmental, public, and political factors that should be considered prior to concluding that this tract warrants additional study for landfill development. Some of these factors include:

- According to Mr. Fuller, this land is heavily used by the public for recreation. Purchasing this land and developing a landfill would remove a large area open to all members of the public for enjoyment of the great outdoors. According to Mr. Fuller, current use is taken into account when the application for sale is internally reviewed, and properties that are highly utilized by the public are less likely to be approved for sale.
- The area is picturesque. Landfill development on this site would potentially compromise the scenic quality of the landscape during the development life.

- Landfill development on the land could potentially reduce the property value of the surrounding state land. Mr. Fuller indicated that this would be a consideration during the review process, and it has the potential to negatively influence the review process.
- A portion of the area is used for livestock grazing. Livestock would be displaced, and rancher objection is likely.
- Development may fragment wildlife habitat and displace local wildlife populations.
- Opposition from environmental and recreational groups is foreseeable.
- Recommendation for sale by the OSLI is not a guarantee.
- The land will be appraised for its highest and best use, which is likely not for waste disposal. Depending on the identified highest and best use, this could be very cost prohibitive for the City.
- As shown on the location restriction maps in Attachment A, the area has CBM wells on the property. A logical landfill layout and associated operations would likely impact these wells, and the City would be required to purchase and abandon several wells. Well purchase and abandonments would increase the cost of landfill development at this location.
- The area identified by WDEQ consists of a series of buttes. This topography is not suitable for landfill development. Extensive earthwork activities would be required, and landfill development may not be possible due to soil quality and quantity restrictions.
- As shown on the USDA-NRCS Web Soil Survey map in Attachment B, the core development area is classified as very limited for landfill development.
- Mr. Fuller indicated that trespassing has been an on-going issue on this land. Due to the recreational allure of the property, trespassing would be difficult to halt.
- Current transportation infrastructure may not be able to support landfill operations. Significant improvements would be required. The City (i.e. solid waste users) would bear the burden of this cost.
- Other utility infrastructure is not available.

The proposed MSW and C&D expansion area variance request has been met with opposition from a few surrounding landowners. The City recognizes and sympathizes with the personal and emotional charge behind the opposition, but also understands the high likelihood of equal or greater opposition to any proposed alternate landfill location. While an effective governmental body must be aware of its citizens concerns, it also is mandated by the same citizens and the State of Wyoming to provide for the health, safety and welfare of its residents. The City cannot respond to opposition to this project by ceasing its efforts on the proposed landfill expansion, rather it must respond to the community's current and future needs to determine, develop, and install effective methods of waste disposal and treatment in a manner that is both environmentally and cost effective.

As such, there is oftentimes no good answer when it comes to landfill siting and the City acknowledges that some governmental problems are difficult to solve and inevitably require making a tough decision where minority opposition may not be satisfied. Over the past 10 years, the City has extensively evaluated its future landfill options through historical studies, the Sheridan Solid Waste Management Plan (2001), the Integrated Solid Waste Planning (ISWMP) process (2009), and the Variance Request. The proposed landfill expansion, which is adjacent to the existing landfill, has been identified in these

planning documents as clearly best for the community as a whole. The City has an affirmative responsibility to act in the best interest of its citizens. The Variance Request fulfills that obligation for both City and County residents.

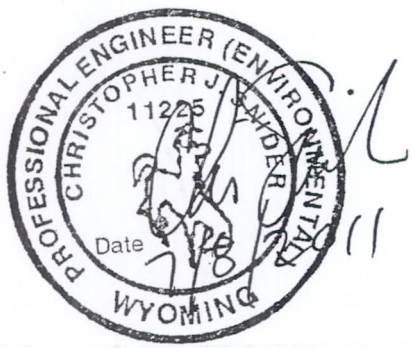
Any other landfill development represents an undue burden on the City of Sheridan and the Sheridan solid waste rate payers. No other site possesses the current positive attributes, including the benefits of long term municipal planning, reasonable proximity to users, preferred cost, and a long term history of environmental protection. The proposed site development is an opportunity for the City of Sheridan and Sheridan County to enjoy an environmentally sound disposal site.

The City of Sheridan understands WDEQ variance criteria does not include the consideration of landfill development and operational cost, however, the City of Sheridan cannot ignore cost considerations in the execution of its duty to citizens. The City of Sheridan does not believe the significant costs associated with the unnecessary pursuit and development of an alternate site should be unfairly forced by the WDEQ upon the citizens of Sheridan and Sheridan County. The City of Sheridan has planned for this landfill development for over a decade and the proposed site is clearly the best choice for the City of Sheridan and Sheridan County.

The legislative intent behind the entire subset of variance rules is clear. The WDEQ and the State Legislature understood that certain facilities could not meet the inherently conservative state-wide landfill location restriction criteria, even though said facilities may be technically, environmentally, politically, and socially sound. The City understands the WDEQ must ethically explore all possibilities for this Variance request and also is faced with the same balancing requirements imposed upon the City of Sheridan, which include acknowledging concerns posed by surrounding landowners and hearing the opinions of City residents all while following the State's inherent mandate to ensure that political subdivisions and private entities interpret and follow state regulations accurately and in the manner intended by the WDEQ and state legislature for the good of the citizens of this State.

In a highly technical and complicated task such as landfill permitting, this investigation and evaluation process is not taken lightly, nor in a vacuum, however, a government is charged with making the final decision for its citizens. The City of Sheridan must expand its landfill operations to meet community needs and must do so in the least intrusive manner for those same community members, both financially and physically. While the WDEQ is charged with overseeing this process, the City respectfully requests that your organization appreciate the City's diligent efforts to meet the specific requirements of its residents. To that end, the City provides this correspondence and supporting data to your organization for its consideration, and most importantly, to assist the WDEQ in reaching the clear conclusion that the proposed site is the best selection for this project. We look forward to your decision.

Sincerely,



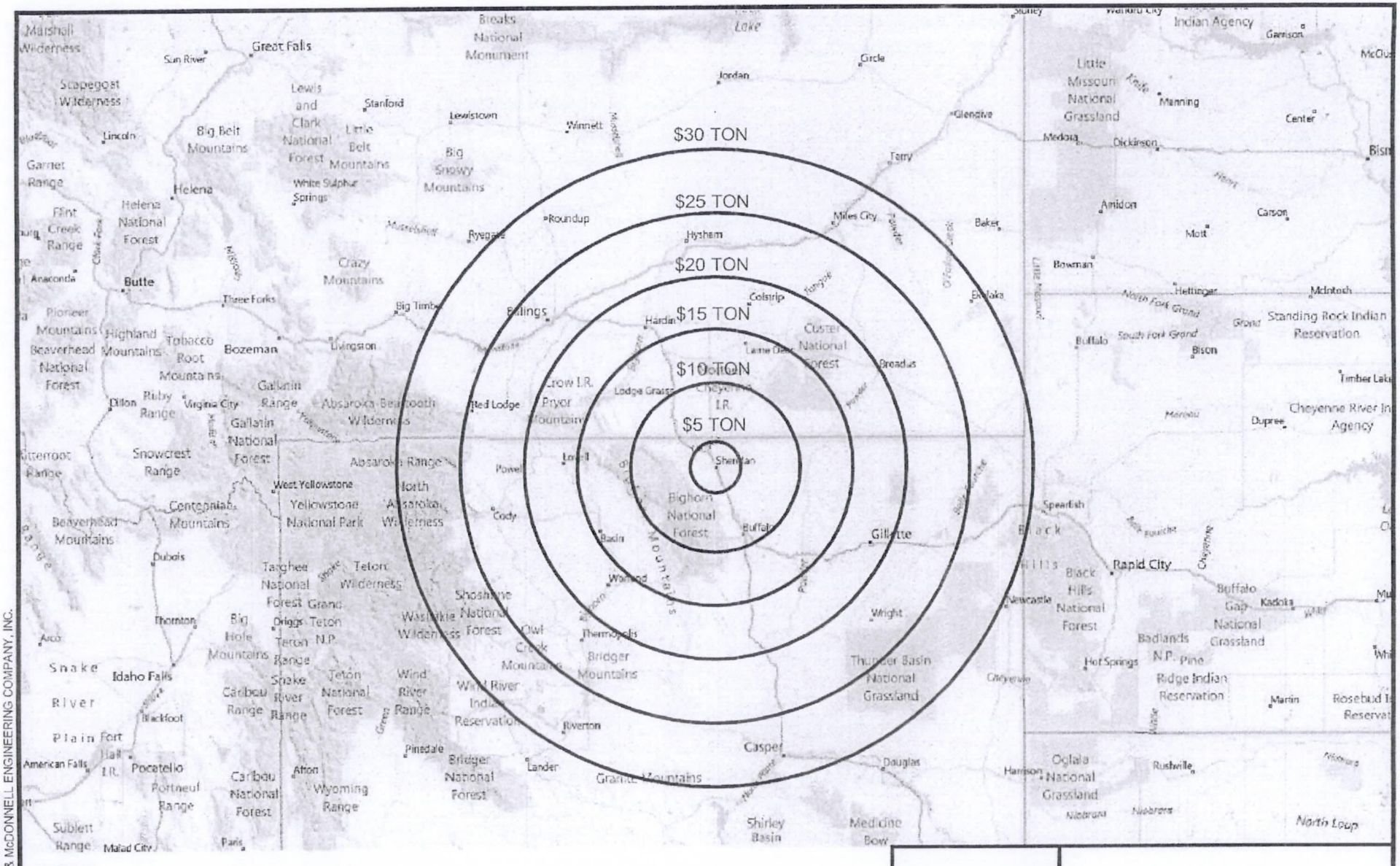
Brandy S. Kean
Project Manager

Christopher J. Snider, PE, RG
Associate

BSK/CJS

Attachments: Attachment A – Revised Location Restriction Maps
Attachment B – USDA Web Soil Survey Constraints
Attachment C – Hauling Impacts

Cc: Mayor Dave Kinskey, City of Sheridan
Mr. Nic Bateson, P.E., Public Works Director, City of Sheridan
Mr. Dan Roberts, P.E., Utilities Manager, City of Sheridan
Mr. Charles Martineau, Solid Waste Manager, City of Sheridan
Mr. John Corra, Director, WDEQ
Mr. Dale Anderson, Program Principal, WDEQ SHWD
Ms. Carol Stark, Environmental Scientist, WDEQ SHWD
Mr. Dave Fuller, Appraiser, Wyoming Office of State Lands & Investments
Rod Liesinger, P.E. Sheridan County Public Works Director



NOTE:

1. DISTANCES AND COSTS SHOWN ARE APPROXIMATE AND WOULD REQUIRE FURTHER REFINEMENT BASED ON ACTUAL TRAVEL ROUTES, SPEED AND PAYLOADS

0 50 100

SCALE IN MILES

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Burns & McDonnell SINCE 1898

ATTACHMENT C

HAUL COST VS. DISTANCE
SHERIDAN COUNTY, WYOMING

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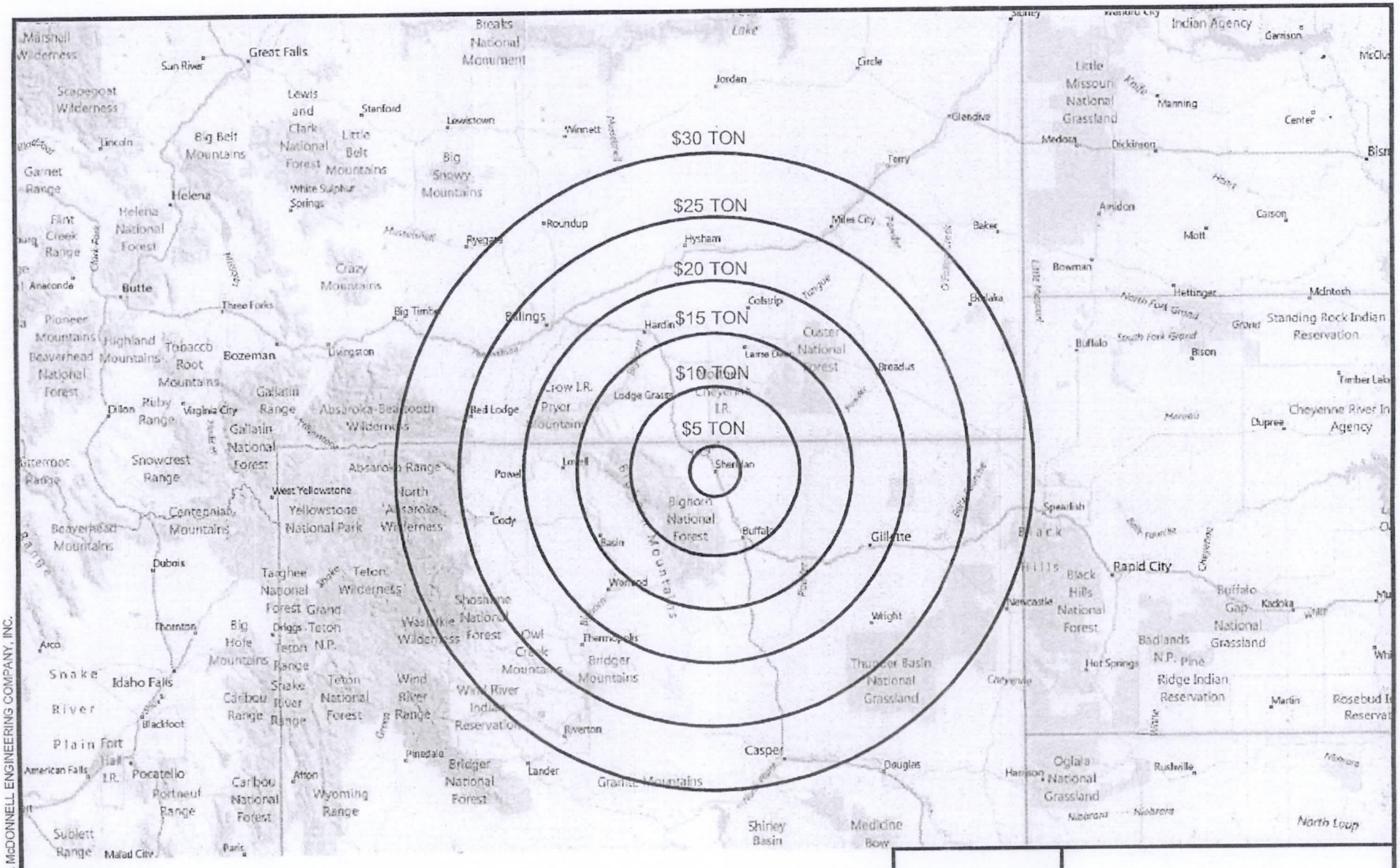

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Burns & McDonnell SINCE 1898

ATTACHMENT C

HAUL COST VS. DISTANCE
SHERIDAN COUNTY, WYOMING

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MEMORANDUM

To: John Corra, Director, Wyoming Department of Environmental Quality

From: Carl Anderson, SHWD Administrator CA

Date: August 9, 2011

RE: Recommendation to grant variance request, Sheridan Landfill, SHWD File # 10.526

On December 30, 2009, the City of Sheridan requested a variance from the following location standards:

- *W.S. 35-11-502(c)(ii)*, location of facility within one mile of an occupied dwelling house except with the written consent of the owner;
- *W.S. 35-11-502(c)(iv)*, location of facility within one-half (1/2) mile of a water well permitted or certificated for domestic or stock watering purposes except with written consent of the owner of the permit or certificate; and
- *W.S. 35-11-502(c)(i)*, no facility greater than one acre in size shall be located within one mile of the boundaries of an incorporated city or town.

These location standards are also contained in Wyoming Solid Waste Rules and Regulations (SW) Chapter 2 Section 3(a)(iii),(v) and (xvi).

The purpose of the variance application is to allow for an approximate 102 acre expansion of the facility boundary which would provide for additional disposal capacity. The existing Sheridan landfill is expected to be filled in approximately eight to ten years. The lateral expansion would provide additional landfill capacity for the disposal of municipal solid waste (MSW) and construction and demolition (CD) waste, and would result in an estimated 34 years of additional disposal for MSW and 44 years of additional disposal for CD waste.

There is one residence within 1,000 feet of the proposed landfill expansion. Because the existing landfill and expansion area are near the city there are a number of residences between 1,000 feet and one mile of the proposed expansion. However, the majority of these are screened from view of the landfill by local topography.

There are seven permitted wells within one-half mile. One of these is a permitted drinking water well, four are stock wells, and two are used for watering a race track. Of the seven wells, only three stock wells are downgradient; the other four are upgradient or cross gradient from the landfill.

After Department review and comment, with subsequent revisions by the City, the Department issued a draft determination on November 30, 2010. The City subsequently published the required notice of a public hearing once per week for four consecutive weeks.

On January 25, 2011 a public hearing was held. The sign-in sheet contains 25 names; of these 20 were interested parties not related to city government (the others included the mayor, solid waste manager, engineers and consultants). Public comments were received during the hearing. The mayor spoke in favor of granting the variance. Most comments were not in favor of the variance. Many of the comments against were made by nearby property owners to the east and southeast, and appeared to be based at least in part on past operation of the current landfill. Also a petition was presented to Department staff that had been signed by individuals opposed to the variance. The petition was signed by 67 persons total; 35 provided addresses, 9 of these had properties listed within one mile of the landfill. For reference: the

variance information indicates there are 198 property owners within one mile of the landfill. 134 are private, and 64 are businesses. Comments not in favor of the variance were generally concerned with issues such as litter, odors, dust, and vectors. A few commenters expressed concern for groundwater protection and property values for properties south and east of the landfill. Concern was also expressed related to surface water run-off flowing to Prairie Dog Creek. As a result of the information received from the City and public comments, on March 23, 2011 the City was asked to further investigate available alternative locations.

In response, on July 8, 2011 the City provided documentation of additional investigation for landfill property that would meet the location standards. The results of this investigation reaffirmed the City's previous assertion that the additional expense to all rate payers that would be incurred by moving to another location was not warranted given the proposed design and operation of the proposed expansion area.

Wyoming Statute 35-11-502(c) permits the director of the Department of Environmental Quality, upon recommendation of the administrator, to issue a variance from the above location standards after public hearing and upon written findings that the variance will not injure or threaten to injure the public health, safety or welfare. The director shall only make such a finding if the evidence presented in the application and obtained at a public hearing demonstrates that the following three (3) conditions are met:

1. There are no available alternative locations which meet the location standards for a solid waste management disposal facility to meet the disposal needs of the applicant, within a reasonable distance of the boundary of the service area of the facility;

2. It is not possible for the applicant to use existing, permitted solid waste management disposal facilities owned by another person within a reasonable distance of the boundary of the service area of the facility; and

3. Special or unique conditions or circumstances apply to the applicant and justify granting the variance.

The first condition above requires an evaluation of alternative locations that would meet the disposal needs of the applicant within a reasonable distance of the boundary of the facility's service area. To assess this condition, the department must consider the disposal needs of the City and assess what distances would be considered reasonable. It is evident that these two factors are closely related. A facility located close to the public it serves is advantageous because it encourages and facilitates landfill disposal while discouraging unregulated dumping. Reasonable disposal fees also provide incentive for proper waste disposal. The City has adequately demonstrated that, when compared to other alternatives, the proposed location best meets the need to provide a cost effective and optimally located disposal service to the people it serves. A more exhaustive and costly search of other locations would not be in the best interest of the people served.

The second condition above is similar to the first in that it requires a demonstration of what would be a reasonable distance for travel to an alternate location operated by someone other than the City. Under the current circumstances of facility design and operation, the City has adequately demonstrated that when compared to disposal at other existing facilities, the proposed location best meets the disposal needs of the City.

The final condition to consider is any special or unique conditions or circumstances. There are at least two circumstances or conditions in this case that may be considered special or unique. The first of these is the fact that the City already operates a disposal facility adjacent to the proposed site. Operators

considering sites for new disposal facilities generally do not have this option and often must start from scratch with no prior history in the area. The City has the unique ability to propose activities adjacent to a site where the same activities have been ongoing for a number of years. The second special or unique circumstance at the proposed site is the availability of an existing support infrastructure consisting of monitoring wells, buildings and utilities that may not be present at another location. The City would need to construct some or all of these services at any alternate location.

After considering the above three items it remains necessary to determine that the variance will not injure or threaten to injure the public health, safety, or welfare. In regards to proposed site's proximity to an occupied dwelling house, the application has adequately demonstrated that traffic caused by operation of the proposed disposal facility will not pose a safety threat to the public. From information provided by the City it appears that the above referenced issues of litter, dust, odors, vectors, and noise would be addressed using practices typical for MSW landfill operations. However, during public comment several comments indicated there were issues with these subjects related to operation of the current facility. Information on this point conflicts; except for a mention of litter in a few older inspections, these issues have not been noted as problems in past Department inspections, and the City said they have not been notified by local citizens of problems in the past. There is mention of past issues in notes of meetings with a few concerned citizens in 2009, but no documentation is available of historic complaints to the City, and DEQ staff indicated complaints have not been made to the DEQ office. Neighbors indicated they were not aware that contacting DEQ was an appropriate option. Of note on the subject of odors is mention by nearby neighbors of odors that are apparently, as determined by the nature of the odor description, related to composting of biosolids at the existing landfill. The Department notes that the composting of biosolids is not proposed to be moved to the expansion area. Further, the composting of biosolids could continue at the existing location as a post-closure use in the event disposal operations ceased and moved to another location. Based on this information, this issue is unrelated to the expansion of the landfill and this variance.

On the subject of groundwater protection, borings have been drilled to at least the depth of groundwater at twenty-one locations in the proposed expansion area. Lithologic logs for these borings indicate the subsurface materials are a mixture of interbedded very fine to fine sands, silty and/or clayey fine sands, and silts and clays. The MSW area will be lined to collect leachate and remove it to prevent groundwater contamination. Information in the variance indicates the City will limit materials to be disposed in a proposed unlined CD disposal area. This, along with a proposal to maintain at least 20 feet separation from the base of CD waste to groundwater in the interbedded sands, silty/clayey sand, silts and clays should be adequate for groundwater protection. Groundwater monitoring will be required. The application has also adequately demonstrated that design features and monitoring specifications are sufficient to preclude methane migration from affecting buildings within one (1) mile of the proposed facility.

While the variance indicates issues such as dust, litter and vectors will be adequately addressed; several nearby property owners are not in agreement. In order to address these concerns, we propose to issue the variance with conditions to address potential odor, dust, litter and similar issues. Related to surface water, commenters expressed concern with run-off to Prairie Dog Creek. While there is a small surface water drainage from the current landfill to the creek, there is no surface water flowing from the expansion area to Prairie Dog Creek. However, we propose to condition the variance to require containment of any run-off that may contact waste.

Finally, granting this variance in no way ensures that a permit will be granted for solid waste management at the proposed site. The City will need to demonstrate compliance with all applicable requirements of the Solid Waste Rules and Regulations before a waste management permit can be issued by the Department. On-going routine inspections will monitor continued compliance with applicable regulations.

In summary, the Department recognizes the City's need to provide waste management services to all of the people it serves now and in the future. The Department also recognizes the responsibility of the City and the Department to ensure that operation of this proposed facility does not injure or threaten to injure the public health, safety, or welfare. In the opinion of this administrator, granting the requested variance will not constitute a conflict with either of these requirements. Therefore, this administrator recommends that the requested variance be granted with conditions that address concerns received by the Department.

Cc: Cheyenne SHWD File # 10.526
Casper SHWD File # 10.526
Sheridan SHWD File # 10.526

Department of Environmental Quality

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

Matthew H. Mead, Governor

152 N. Durbin St., Suite 100 · Casper, WY 82601 · (307) 473-3450

John Corra, Director

August 9, 2011

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mayor David Kinskey
City of Sheridan
55 Grinnell Plaza
Sheridan, WY 82801

RE: Approval of requested variance, Sheridan landfill expansion, SHWD File # 10.526

Dear Mayor Kinskey:

Pursuant to W.S. 35-11-502(c), and SW Chapter 1 Section 2(i) the City of Sheridan, Wyoming (City) has requested a variance from location standards in the Wyoming Environmental Quality Act W.S. 35-11-502(c)(i),(ii),(iv), and the Wyoming Solid Waste Rules and Regulations, Chapter 2 Section 3 (a)(iii), (v), and (xvi). These location standards pertain to solid waste management disposal facilities:

- within one mile of an occupied dwelling house,
- one-half mile to a drinking water source, and
- within one mile of the boundaries of an incorporated city or town

The variance was requested for an approximately 102 acre parcel located directly south of the existing landfill facility in the South ½, Section 25 and NE ¼ of Section 36, Township 56 North, Range 84 West in Sheridan County (facility).

The City provided information related to the variance request as described in the City's December 30, 2009 variance application with amended information provided in documents dated September 8, 2010, November 9, 2010, December 30, 2010, and July 8, 2011. After completing a review of the City's request a public hearing was held on January 25, 2011 to accept written and verbal comments on the variance request. The comments received during the hearing focused on potential impacts to groundwater, litter, dust, vectors, odor, noise, and potential impacts to property values. After the hearing, in correspondence dated March 23, 2011 the Department requested additional information from the City to clarify information on potential alternative locations. The City responded with additional information in correspondence dated July 8, 2011.

After careful consideration of the technical issues raised, the Department has concluded that the proposed design and operation of the facility will minimize the threat to local

groundwater resources. Borings have been drilled to at least the depth of groundwater at twenty-one locations in the proposed expansion area. Lithologic logs for these borings indicate the subsurface materials are a mixture of interbedded very fine to fine sands, silty and/or clayey fine sands, and silts and clays. The proposed municipal solid waste disposal area will be lined and will have a leachate collection and removal system with leak detection as necessary. An unlined CD disposal area is proposed. The City will restrict materials to be disposed in the unlined CD disposal area. These restrictions, along with a proposal to maintain at least 20 feet separation from the base of CD waste to groundwater will prevent groundwater contamination. Groundwater monitoring will be required to confirm this, and to identify any groundwater impacts should they occur.

Information provided by the City indicates issues such as dust, odor, litter, and vectors will be addressed. Several nearby property owners are not in agreement and expressed concerns with the proposed facility. In order to address concerns of nearby residents, approval of the variance request is being conditioned to address potential odor, dust, litter, vectors, and similar issues.

The Department has determined that variances from the above referenced location standards should be granted subject to compliance with the conditions listed below. This decision has been reached after analysis of all information provided the applicant and the comments provided by the public. This decision is based on the determination that the variance to location standards will not injure or threaten to injure public health, safety, or welfare. In any future solid waste disposal permit application for any portion of the proposed expansion area, this variance constitutes compliance with the location standards of Wyoming Environmental Quality Act W.S. 35-11-502(c)(i),(ii),(iv), and the Wyoming Solid Waste Rules and Regulations, Chapter 2 Section 3 (a)(iii), (v), and (xvi).

While the Department is satisfied that the proposed operation will be acceptable, several concerned citizens commented on litter, dust, odor, and vector issues during the public hearing. In order to address comments received by affected parties this variance is being granted with the following conditions:

Variance Condition # 1

The City shall file a copy of this variance approval letter with the County Clerk for Sheridan County, for filing with the property deed for the facility. Documentation shall be provided to the Department upon completion.

Variance Condition # 2

The municipal solid waste disposal area shall be covered at the end of each operating day. The operator shall conduct daily visual evaluations of off-site litter, and promptly schedule off site litter collection on an as-needed basis. The operator shall collect litter that leaves the facility at least quarterly. Other than disposal of heavy construction/demolition wastes such as concrete, asphalt, etc. that do not pose a blowing litter problem, waste disposal shall cease during high wind conditions that create a potential blowing litter problem despite the screening and other control measures required by this variance and the approved operating permit for the proposed expansion area. Litter collection activities shall be recorded and maintained in the facility's

operating record. Details to address this variance condition shall be included in the permit application documents for the proposed expansion area.

Variance Condition # 3

The operator shall install, clean, and maintain on-site litter screens as well as litter fence(s) within and at the facility boundary at least monthly. Details to address this variance condition shall be included in the permit application documents for the proposed expansion area.

Variance Condition # 4

All permanent roads within the expansion area shall be paved, graveled, covered with rotomill asphalt, or gravel or equivalent material to control dust from vehicle traffic and shall be maintained as needed. Details to address this variance condition shall be included in the permit application documents for the proposed expansion area.

Variance Condition # 5

Areas greater than one acre in size that will remain unused for periods longer than one year shall be seeded with a temporary vegetative cover, or the surface shall be ripped or chiseled to create a roughened surface, or otherwise effectively stabilized against wind erosion using wind fences or other methods. Details to address this variance condition shall be included in the permit application documents for the proposed expansion area.

Variance Condition # 6

The operator shall routinely blade the fire lane around the waste management area (s) to allow for identification of tracks of vectors such as skunks and raccoons, or utilize similar alternative method to identify vectors. Monthly inspections shall be conducted to evaluate the presence of terrestrial vectors in waste management areas. If vectors are identified as frequenting waste disposal areas the operator shall develop vector management plans. These plans shall be developed in consultation with appropriate local game and fish and animal control personnel. Plans shall include specific steps to eliminate vectors such as raccoons and skunks. Details to address this variance condition shall be included in the permit application documents for the proposed expansion area.

Variance Condition # 7

The storm water system design and operational plan for the proposed expansion area must address the different phases of development for the facility and isolate all waste-contact storm water and prevent waste contact storm water from leaving the facility. Details to address this permit condition shall be included in the variance application documents for the proposed expansion area.

Variance Condition # 8

If odors from waste disposal operations are identified as a significant problem, the City will work with the Department to identify possible odor management options.

Variance Condition # 9

The administrator may require modifications to the design, construction, and operation of the permitted facility if litter, dust, and odor controls are insufficient.

Please note that by granting this variance, the City may now submit a solid waste disposal permit application covering the facility. However, nothing in this grant of a variance entitles the City to be issued a permit for the disposal of solid wastes at the facility. The City must apply for, and receive, a solid waste disposal permit prior to placing any solid wastes at the facility.

As you are probably aware, prior to the public meeting held on January 25, 2011 a few individuals requested a hearing on this matter before the Environmental Quality Council. Dale Anderson, the Wyoming Department Environmental Quality District #3 Supervisor, Solid Waste Permitting and Corrective Action, informed them that requesting a hearing was premature at that time, and promised to notify them of the Department's decision on this matter in writing. Toward that end, we will be mailing copies of this correspondence to persons that attended the public hearing.

If, within sixty (60) days of the Department's decision on the variance request, an aggrieved party submits a written request for a hearing before the Environmental Quality Council (EQC), this decision will be stayed pending the EQC's final determination.

If you have any questions please feel free to call Carl Anderson at (307) 777-7752 or Dale Anderson at (307) 473-3472.

Sincerely,

John V. Corra
Director
Wyoming Department of Environmental Quality

Copy: Charles Martineau, Solid Waste Manager, City of Sheridan, P. O. Box 848, Sheridan, WY 82801
Dave Fuller, Appraiser, Wyoming Office of State Lands & Investments, 122 W.25th, 3rd Floor, Cheyenne, Wyoming 82002
Carl Anderson ☞ Cheyenne SHWD File # #10.526
Tim Moe ☞ Sheridan SHWD File #10.526
Carol Stark ☞ Dale Anderson ☞ Casper SHWD File # #10.526

R. Finley

FILED

APR 24 1992

Terri A. Lorenzon, Adm. Asst.
Environmental Quality Council

BEFORE THE

ENVIRONMENTAL QUALITY COUNCIL

STATE OF WYOMING

IN THE MATTER OF A VARIANCE REQUEST FROM THE WASHAKIE COUNTY SOLID WASTE DISPOSAL DISTRICT NO. 1,	)))	DOCKET NO. 2271-91

FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER

THIS MATTER came before the Environmental Quality Council for a hearing on January 31, 1992. The hearing was held at the Washakie County Commissioners' Room in the Washakie County Courthouse at 10th Street and Big Horn Avenue in Worland, Wyoming. Mr. Peter C. Maxfield, a member of the Environmental Quality Council, presided as Hearing Examiner. Council members present were Fred H. Carr, Vincent R. Lee, John C. Darrington, and John V. Crow. Also present was Terri A. Lorenzon, attorney for the Environmental Quality Council. The Petitioner, Washakie County Solid Waste Disposal District No. 1, was represented by Wendy Press Sweeny, Washakie County and Prosecuting Attorney. The Department of Environmental Quality was represented by Mike Barrash of the Attorney General's Office.

Having considered the evidence before it and the arguments of the parties, the Environmental Quality Council now makes its Findings of Fact, Conclusions of Law and Order.

FINDINGS OF FACT

1. Washakie County Solid Waste Disposal District No. 1 is an entity of the County of Washakie, State of Wyoming.

2. On or about the 12th day of July, 1991, the Washakie County Solid Waste Disposal District No. 1 filed an application with the Environmental Quality Council for a variance in order to expand the Washakie County landfill site.

3. The legal description of the area for the proposed expansion is described as the E1/2NE1/4 of Section 22 and the SW1/4NW1/4 of Section 23, T. 47 N., R. 93 W. of the Sixth Principal Meridian, Washakie County, Wyoming. The expansion will

include facilities for the disposal of sump waste, contaminated soil, asbestos, and septic tank sewage from the Washakie County Solid Waste Disposal District No. 1.

4. §35-11-502(c) of the Wyoming Statutes prohibits the location or construction of a solid waste management disposal facility larger than one (1) acre within one (1) mile of an incorporated city or town unless a variance is granted.

5. The proposed expansion area of the landfill exceeds the one (1) acre requirement and would be partially within the one (1) mile limitation of an incorporated city or town, namely, Worland, Wyoming.

6. Notice was published in the Northern Wyoming Daily News advising that individuals may intervene in the process by submitting their requests on or before January 17, 1992. No requests were received by the Department of Environmental Quality, the Washakie County Solid Waste Disposal District No. 1, or the Environmental Quality Council.

7. Notice also provided that anyone wishing to have input into the decision for the variance request could appear at the hearing held on January 31, 1992.

8. The Statutes set minimum standards for granting a variance, but do not automatically entitle an applicant to a variance upon meeting them. The rules and regulations of the Department of Environmental Quality provide the following criteria which may assist the Environmental Quality Council in making its determination as to whether a particular variance should be granted when the statutory minimum standards are met:

a. The applicant should present an analysis of additional traffic which would result from the proposed facility, and demonstrate that additional traffic caused by operation of a disposal facility will not pose a safety threat to the public;

b. The applicant should demonstrate that the operation of the proposed facility will not present odor, dust, litter, insects, noise, health (human and animal) or

aesthetic problems, and will not present a public nuisance by its proximity to the town, schools, and/or dwellings. This demonstration may be made through analysis of the facility design and operation practices;

c. The applicant should provide design features and monitoring specifications used to preclude methane migration from affecting any building within one (1) mile of the proposed facility, if the facility is used for the disposal of waste which may form methane as a decomposition product.

9. Evidence was presented to show that the applicant currently uses, and will continue to use the existing road leading to the landfill. The existing road is a County road and is sufficient to provide traffic to both the current landfill as well as the expansion area. Testimony was presented that the proposed expansion area is actually further from the City of Worland than the current landfill site and, therefore, the operation of the proposed facility on the expanded area will not present odor, dust, litter, insects, noise, health (human and animal) or aesthetic problems and will not present a public nuisance by its proximity to the town, schools, and/or dwellings.

10. Evidence was presented to show that test wells were drilled in the area of the landfill expansion, and no groundwater was encountered in those wells. From an examination of well logs, the groundwater is estimated to be at least 160 feet deep. Soil permeability is estimated to be in the range of 10-6 to 10-7 cm/s. This combination of deep groundwater and low permeability soils at the site significantly reduce any risks of groundwater contamination by the landfill operation.

11. The Department of Environmental Quality Control has recommended approval of the proposed expansion site for the reasons specified in the August 15, 1991, letter to the Council; a copy of which is attached hereto and incorporated herein by this reference marked Exhibit "B".

12. The City of Worland has also presented approval of the proposed expansion site.

CONCLUSIONS OF LAW

1. The Environmental Quality Council has jurisdiction over the parties and subject matter of this hearing.

2. There were no objections filed or stated at the hearing to this variance request.

3. The requested expansion of the Washakie County landfill is necessary to the continued operation of the landfill.

4. The applicant has met its burden of demonstrating that the proposed expansion site is in compliance with all applicable statutes and regulations and satisfies the criteria set forth by the Department of Environmental Quality in their rules and regulations Chapter I, §2(i).

5. The expanded area for which the variance is requested does not appear to injure or threaten to injure the public health, safety or welfare of the citizens of Washakie County and the City of Worland.

6. Proper notice was provided to the general public, more specifically, notice was published in the local newspaper on January 2, 1992, January 9, 1992, January 16, 1992, January 21, 1992, and January 28, 1992.

7. No claims were filed by any individuals in order to intervene in this action.

8. All parties who desired to be heard had an opportunity to be heard at the hearing held on January 31, 1992.

ORDER

Based upon the Findings of Fact and Conclusions of Law, the Environmental Quality Council hereby orders that:

1. The variance request of the Washakie County Solid Waste Disposal District No. 1 shall be and the same is hereby granted.

2. The Washakie County Solid Waste Disposal District No. 1, shall be authorized to expand their existing solid waste disposal facility as set forth in the application filed in this matter provided it satisfies all other applicable requirements for a permit under the Environmental Quality Act and Solid Waste Management regulations.

DATED this 23rd day of April, 1992.

Peter C. Maxfield
Hearing Examiner

Approved as to Form:

Terri A. Lorenzon
Attorney for the Council

Mike Barrash
Assistant Attorney General

CERTIFICATE OF SERVICE

I, Terri A. Lorenzon, certify that at Cheyenne, Wyoming, on the 24th day of April, 1992, I served a copy of the foregoing Order by depositing copies of the same in the United States mail, postage prepaid, duly enveloped and addressed to:

Wendy Press Sweeny
Washakie County Couthouse
Worland, WY 82401

and by interoffice mail of the same date to:

David Finley
Program Manager
Solid Waste Management
Department of Environmental Quality
122 W. 25th Street, Herschler Building
Cheyenne, WY 82002

Mike Barrash
Assistant Attorney General
Attorney General's Office
State Capitol Building
Cheyenne, WY 82002

Terri A. Lorenzon

TERRI A. LORENZON, Attorney
Environmental Quality Council
2301 Central Avenue, Rm. 407
Cheyenne, WY 82002
Tel: (307) 777-7170

EXHIBIT
tabbies
SHERIDAN 3

Y OF SHERIDAN
LITIES DEPARTMENT
er – sewer – solid waste

55 Grinnell Plaza
P.O. Box 848
Sheridan, Wyoming 82801

Christopher Knodel
Utilities Project Manager
cknodel@sheridanwy.net

phone: 307.675.4259
fax: 307.672.5241
www.sheridanwyo.us

April 2, 2009

Susan Pucket
82 Peno Road
Sheridan, WY 82801

Re: City of Sheridan Potential Landfill Expansion – Meeting Request

Dear Ms. Pucket:

The City of Sheridan is planning a landfill expansion at the current site of operation on Eastridge Road. We are exploring opportunities to expand the landfill to the south of the current operation on 100 acres already owned by the City. The state permitting process for this expansion can be lengthy. As such, we would like to gather your input early in the process. We would like to meet with you to discuss our proposed expansion in more detail for your benefit.

Please feel free to contact me at your earliest convenience to schedule a time to learn more about our landfill expansion plans. My phone number is 307-675-4259. Thank you.

With Best Regards,

Christopher C. Knodel
Utilities Project Manager
City of Sheridan

file copy

CITY OF SHERIDAN
UTILITIES DEPARTMENT
water – sewer – solid waste

55 Grinnell Plaza
P.O. Box 848
Sheridan, Wyoming 82801

Christopher Knodel
Utilities Project Manager
cknodel@sheridanwy.net

phone: 307.675.4259
fax: 307.672.5241
www.sheridanwyo.us

April 2, 2009

John Koltiska
538 Wyarno Road
Sheridan, WY 82801

Re: City of Sheridan Potential Landfill Expansion – Meeting Request

Dear Mr. Koltiska:

The City of Sheridan is planning a landfill expansion at the current site of operation on Eastridge Road. We are exploring opportunities to expand the landfill to the south of the current operation on 100 acres already owned by the City. The state permitting process for this expansion can be lengthy. As such, we would like to gather your input early in the process. We would like to meet with you to discuss our proposed expansion in more detail for your benefit.

Please feel free to contact me at your earliest convenience to schedule a time to learn more about our landfill expansion plans. My phone number is 307-675-4259. Thank you.

With Best Regards,

Chris C. Knodel

Christopher C. Knodel
Utilities Project Manager
City of Sheridan

file copy

CITY OF SHERIDAN
UTILITIES DEPARTMENT
water – sewer – solid waste

55 Grinnell Plaza
P.O. Box 848
Sheridan, Wyoming 82801

Christopher Knodel
Utilities Project Manager
cknodel@sheridanwy.net

phone: 307.675.4259
fax: 307.672.5241
www.sheridanwyo.us

April 2, 2009

Ken Barker
DCM Construction
250 East Ridge Road
Sheridan, WY 82801

W. 5th

Re: City of Sheridan Potential Landfill Expansion – Meeting Request

Dear Mr. Barker:

The City of Sheridan is planning a landfill expansion at the current site of operation on Eastridge Road. We are exploring opportunities to expand the landfill to the south of the current operation on 100 acres already owned by the City. The state permitting process for this expansion can be lengthy. As such, we would like to gather your input early in the process. We would like to meet with you to discuss our proposed expansion in more detail for your benefit.

Please feel free to contact me at your earliest convenience to schedule a time to learn more about our landfill expansion plans. My phone number is 307-675-4259. Thank you.

With Best Regards,

Christopher C. Knodel
Utilities Project Manager
City of Sheridan

file copy

CITY OF SHERIDAN
UTILITIES DEPARTMENT
water – sewer – solid waste

55 Grinnell Plaza
P.O. Box 848
Sheridan, Wyoming 82801

Christopher Knodel
Utilities Project Manager
cknodel@sheridanwy.net

phone: 307.675.4259
fax: 307.672.5241
www.sheridanwyo.us

April 2, 2009

Susan Pucket
82 Peno Road
Sheridan, WY 82801

Re: City of Sheridan Potential Landfill Expansion – Meeting Request

Dear Ms. Pucket:

The City of Sheridan is planning a landfill expansion at the current site of operation on Eastridge Road. We are exploring opportunities to expand the landfill to the south of the current operation on 100 acres already owned by the City. The state permitting process for this expansion can be lengthy. As such, we would like to gather your input early in the process. We would like to meet with you to discuss our proposed expansion in more detail for your benefit.

Please feel free to contact me at your earliest convenience to schedule a time to learn more about our landfill expansion plans. My phone number is 307-675-4259. Thank you.

With Best Regards,

Christopher C. Knodel
Utilities Project Manager
City of Sheridan

file copy

CITY OF SHERIDAN
UTILITIES DEPARTMENT
water – sewer – solid waste

55 Grinnell Plaza
P.O. Box 848
Sheridan, Wyoming 82801

Christopher Knodel
Utilities Project Manager
cknodel@sheridanwy.net

phone: 307.675.4259
fax: 307.672.5241
www.sheridanwyo.us

April 2, 2009

Sheridan Speedway, Inc.
1759 Commercial Lane
Sheridan, WY 82801

Re: City of Sheridan Potential Landfill Expansion – Meeting Request

To Whom It May Concern:

The City of Sheridan is planning a landfill expansion at the current site of operation on Eastridge Road. We are exploring opportunities to expand the landfill to the south of the current operation on 100 acres already owned by the City. The state permitting process for this expansion can be lengthy. As such, we would like to gather your input early in the process. We would like to meet with you to discuss our proposed expansion in more detail for your benefit.

Please feel free to contact me at your earliest convenience to schedule a time to learn more about our landfill expansion plans. My phone number is 307-675-4259. Thank you.

With Best Regards,

Christopher C. Knodel
Utilities Project Manager
City of Sheridan

file copy

CITY OF SHERIDAN
UTILITIES DEPARTMENT
water – sewer – solid waste

55 Grinnell Plaza
P.O. Box 848
Sheridan, Wyoming 82801

Christopher Knodel
Utilities Project Manager
cknodel@sheridanwy.net

phone: 307.675.4259
fax: 307.672.5241
www.sheridanwyo.us

April 2, 2009

Cindy Hager
PO Box 38
Sheridan, WY 82801

Re: City of Sheridan Potential Landfill Expansion – Meeting Request

Dear Ms. Hager:

The City of Sheridan is planning a landfill expansion at the current site of operation on Eastridge Road. We are exploring opportunities to expand the landfill to the south of the current operation on 100 acres already owned by the City. The state permitting process for this expansion can be lengthy. As such, we would like to gather your input early in the process. We would like to meet with you to discuss our proposed expansion in more detail for your benefit.

Please feel free to contact me at your earliest convenience to schedule a time to learn more about our landfill expansion plans. My phone number is 307-675-4259. Thank you.

With Best Regards,

Christopher C. Knodel

Christopher C. Knodel
Utilities Project Manager
City of Sheridan

Burns & McDonnell
SINCE 1898

July 8, 2011

Mr. Carl Anderson, Ph.D.
Administrator
Solid and Hazardous Waste Division
Wyoming Department of Environmental Quality
152 N. Durbin Street Suite 100
Casper, WY 82601

Re: WDEQ Director's Decision Requiring Further Investigation
City of Sheridan Proposed MSW and C&D Landfill Expansion Variance Request
Burns & McDonnell Project No. 49341
WDEQ SHWD File #10.526

Dear Mr. Anderson:

On behalf of the City of Sheridan, Wyoming, Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) is pleased to provide this response to the March 23, 2011 Wyoming Department of Environmental Quality's (WDEQ) letter regarding the proposed municipal solid waste (MSW) and construction and demolition (C&D) landfill expansion variance request. The Final Variance Request for the Proposed MSW and C&D Landfill Expansion (Variance) was submitted to WDEQ on January 3, 2011.

The March 23, 2011 WDEQ letter requested the City conduct a more detailed investigation of alternative landfill locations within a reasonable distance of the City. As part of this investigation, the County Constraints maps in the Variance (Appendix J) were modified to reflect a 2-mile seasonal buffer zone for Greater Sage-Grouse leks and the exclusion of coal bed methane (CBM) wells from the water well restriction map. The revised maps are included in Attachment A of this letter.

Areas that are unconstrained by WDEQ site location restriction criteria are generally located west of the City in the foothills of the Big Horn Mountains and several scattered areas east of the City. Wyoming Solid Waste Rules (WSWR) Chapter 2 Section 3 - Location Standards for wetlands, National Historic Preservation Act, Endangered Species Act, big game winter range breeding grounds, and hydrogeologic conditions were not evaluated when developing the constraints maps in Attachment A due to the site-specific nature of these limitations. These location standards may further eliminate the areas shown as unconstrained in the Appendix A maps.

The additional information contained herein affirms the City has fulfilled the requirements of the Wyoming Solid Waste Rules Chapter 1, Section 2(i)(ii)(A). As WDEQ is aware, landfill siting, investigation, permitting, and construction is a lengthy, multi-year process. The City has proactively approached this process. The City's current landfill is estimated to reach capacity in 2019. Action is imperative, and by prolonging the variance ruling, the City's ability to best serve its citizens is impaired. Burns & McDonnell and the City of Sheridan again ask the WDEQ make a favorable decision on the proposed MSW and C&D landfill expansion variance request.

It is unknown if any of the unconstrained property, whether it be state land parcels or private land, could readily overcome obstacles such as potential public/environmental group/surrounding land owner

9400 Ward Parkway • Kansas City, Missouri 64114-3319
Tel: 816-333-9400 • Fax: 816-333-3690 • www.burnsmcd.com

opposition, landowners who may not agree to sell their land for landfill use, distance from transportation and utility infrastructure, unfavorable topography consisting of high topographic relief, CBM well purchase and abandonment, and unknown subsurface conditions.

The WDEQ constraint maps in Attachment A were further refined to account for soil suitability, which from a practicality standpoint is a key factor when siting a landfill. To further refine the alternative landfill location search, the soil suitability for sanitary landfill facilities was mapped using the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm) for Sheridan County. Soil types designated as "very limited" or "somewhat limited" for sanitary landfill development by the USDA-NRCS Web Soil Survey are shown in Attachment B. Also included in Attachment B is a revised Sheridan County map showing areas that are not excluded by WDEQ restrictions or USDA-NRCS soil constraints.

The geologic and hydrologic suitably of any site other than the proposed expansion area is unknown and is not accounted for in the USDA-NRCS Web Soil Survey results discussed above. The City has invested significantly and wisely in the historical detailed environmental investigations at the existing and proposed sites. These investigations have resulted in a detailed understanding of the site and the natural physical and chemical processes associated with the landfills in the natural environment. The original City landfill, which began operation in the 1940's, has been monitored and investigated in detail. These investigations have demonstrated that waste in place for approximately sixty years has resulted in relatively minor environmental impacts limited to an area immediately adjacent to the landfill footprint only. The modern landfill engineering practices of today will protect the environment.

Assuming another site could be identified within the County that would meet all of the WDEQ location restrictions, is suitable and practical for development, and faces development opposition that is ultimately overcome, a new site would require land purchase, a more extensive permitting and design effort due to a complete subsurface exploration and full site layout and design, mass earthwork activities due to irregular topography, and the construction of landfill, transportation, and utility infrastructure.

Developing a new landfill in a location other than the site proposed by the City of Sheridan would significantly increase capital development costs, putting undue burden on rate payers. Assuming site acquisition, extensive site characterization, development of a new WDEQ solid waste permit, MSW and C&D landfill construction, new landfill buildings, such as a scalehouse and maintenance building, and utility and transportation infrastructure, a new site at another location could feasibility cost between $12 million to $15 million. If the City is required by WDEQ to pursue a new site, tipping fees have the potential to increase $30 to $40 per ton more than tipping fees if the proposed expansion area were developed.

Access is limited to nearly all locations shown as unconstrained in the figures in Attachment B due to the sites' significant distances from developed roadways. Access road improvement is a significant cost that would be avoided by developing the proposed site. According to recent road project bids received by the City, the base course and asphalt that would be required for transportation from a developed roadway to

the new landfill ranges from $45 to $55 per square yard. One mile of roadway to a new site would cost $792,000 to $968,000. This cost excludes roadway mass earthwork, final grading, drainage considerations, and design and construction administration. Road improvements alone could represent more than one million dollars in development costs that rate payers would be forced to bare.

The cost of waste disposal depends on the distance the waste must be hauled from the waste generators (citizens) to the landfill. The proposed landfills' physical location is desirable because it is within a reasonable proximity to the customers who use it. The proposed landfill development will enable the ratepayers to benefit from the avoided costs associated with remote landfill hauling. As shown in Attachment C, hauling has the potential to significantly impact the landfill tipping fee. A haul distance of 10 miles adds over $4 per ton to the landfill tipping fee. If required to haul 20 miles, the tipping fee is estimated to increase by more than $6 per ton.

The municipal wastewater rates may also be affected if the variance is not allowed because the wastewater treatment plant sludge is hauled to the landfill for composting purposes. Numerous citizens utilize the compost produced at the landfill and these customers enjoy the close proximity of the landfill to the City.

Burns & McDonnell has learned through correspondence with WDEQ staff that WDEQ has identified an area southeast of the existing landfill that WDEQ feels may be suitable for landfill development. The property is currently owned by the State of Wyoming and is located in Township 55N Range 83W. This site was considered for future development, but excluded for the reasons discussed below. The following discussion is typical for other areas that look to be available on the figures in Attachment B.

On April 26, 2011, Burns & McDonnell contacted Dave Fuller at the Wyoming Office of State Lands & Investments (OSLI). According to Mr. Fuller, state land procurement is a multi-step process. If, after a rigorous and lengthy review process, the land is released for sale, the land is appraised according to its highest and best use. The land would then be sold at a public auction to the highest bidder. To Mr. Fuller's knowledge, state land has never been sold for the purpose of landfill development.

On paper, the tract of land identified by WDEQ appears to have great potential for landfill development. However, as with any potential landfill development area noted above, there are several environmental, public, and political factors that should be considered prior to concluding that this tract warrants additional study for landfill development. Some of these factors include:

- According to Mr. Fuller, this land is heavily used by the public for recreation. Purchasing this land and developing a landfill would remove a large area open to all members of the public for enjoyment of the great outdoors. According to Mr. Fuller, current use is taken into account when the application for sale is internally reviewed, and properties that are highly utilized by the public are less likely to be approved for sale.
- The area is picturesque. Landfill development on this site would potentially compromise the scenic quality of the landscape during the development life.

- Landfill development on the land could potentially reduce the property value of the surrounding state land. Mr. Fuller indicated that this would be a consideration during the review process, and it has the potential to negatively influence the review process.
- A portion of the area is used for livestock grazing. Livestock would be displaced, and rancher objection is likely.
- Development may fragment wildlife habitat and displace local wildlife populations.
- Opposition from environmental and recreational groups is foreseeable.
- Recommendation for sale by the OSLI is not a guarantee.
- The land will be appraised for its highest and best use, which is likely not for waste disposal. Depending on the identified highest and best use, this could be very cost prohibitive for the City.
- As shown on the location restriction maps in Attachment A, the area has CBM wells on the property. A logical landfill layout and associated operations would likely impact these wells, and the City would be required to purchase and abandon several wells. Well purchase and abandonments would increase the cost of landfill development at this location.
- The area identified by WDEQ consists of a series of buttes. This topography is not suitable for landfill development. Extensive earthwork activities would be required, and landfill development may not be possible due to soil quality and quantity restrictions.
- As shown on the USDA-NRCS Web Soil Survey map in Attachment B, the core development area is classified as very limited for landfill development.
- Mr. Fuller indicated that trespassing has been an on-going issue on this land. Due to the recreational allure of the property, trespassing would be difficult to halt.
- Current transportation infrastructure may not be able to support landfill operations. Significant improvements would be required. The City (i.e. solid waste users) would bear the burden of this cost.
- Other utility infrastructure is not available.

The proposed MSW and C&D expansion area variance request has been met with opposition from a few surrounding landowners. The City recognizes and sympathizes with the personal and emotional charge behind the opposition, but also understands the high likelihood of equal or greater opposition to any proposed alternate landfill location. While an effective governmental body must be aware of its citizens concerns, it also is mandated by the same citizens and the State of Wyoming to provide for the health, safety and welfare of its residents. The City cannot respond to opposition to this project by ceasing its efforts on the proposed landfill expansion, rather it must respond to the community's current and future needs to determine, develop, and install effective methods of waste disposal and treatment in a manner that is both environmentally and cost effective.

As such, there is oftentimes no good answer when it comes to landfill siting and the City acknowledges that some governmental problems are difficult to solve and inevitably require making a tough decision where minority opposition may not be satisfied. Over the past 10 years, the City has extensively evaluated its future landfill options through historical studies, the Sheridan Solid Waste Management Plan (2001), the Integrated Solid Waste Planning (ISWMP) process (2009), and the Variance Request. The proposed landfill expansion, which is adjacent to the existing landfill, has been identified in these

planning documents as clearly best for the community as a whole. The City has an affirmative responsibility to act in the best interest of its citizens. The Variance Request fulfills that obligation for both City and County residents.

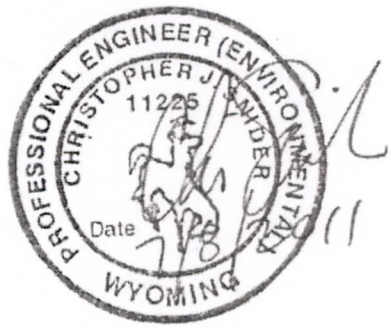
Any other landfill development represents an undue burden on the City of Sheridan and the Sheridan solid waste rate payers. No other site possesses the current positive attributes, including the benefits of long term municipal planning, reasonable proximity to users, preferred cost, and a long term history of environmental protection. The proposed site development is an opportunity for the City of Sheridan and Sheridan County to enjoy an environmentally sound disposal site.

The City of Sheridan understands WDEQ variance criteria does not include the consideration of landfill development and operational cost, however, the City of Sheridan cannot ignore cost considerations in the execution of its duty to citizens. The City of Sheridan does not believe the significant costs associated with the unnecessary pursuit and development of an alternate site should be unfairly forced by the WDEQ upon the citizens of Sheridan and Sheridan County. The City of Sheridan has planned for this landfill development for over a decade and the proposed site is clearly the best choice for the City of Sheridan and Sheridan County.

The legislative intent behind the entire subset of variance rules is clear. The WDEQ and the State Legislature understood that certain facilities could not meet the inherently conservative state-wide landfill location restriction criteria, even though said facilities may be technically, environmentally, politically, and socially sound. The City understands the WDEQ must ethically explore all possibilities for this Variance request and also is faced with the same balancing requirements imposed upon the City of Sheridan, which include acknowledging concerns posed by surrounding landowners and hearing the opinions of City residents all while following the State's inherent mandate to ensure that political subdivisions and private entities interpret and follow state regulations accurately and in the manner intended by the WDEQ and state legislature for the good of the citizens of this State.

In a highly technical and complicated task such as landfill permitting, this investigation and evaluation process is not taken lightly, nor in a vacuum, however, a government is charged with making the final decision for its citizens. The City of Sheridan must expand its landfill operations to meet community needs and must do so in the least intrusive manner for those same community members, both financially and physically. While the WDEQ is charged with overseeing this process, the City respectfully requests that your organization appreciate the City's diligent efforts to meet the specific requirements of its residents. To that end, the City provides this correspondence and supporting data to your organization for its consideration, and most importantly, to assist the WDEQ in reaching the clear conclusion that the proposed site is the best selection for this project. We look forward to your decision.

Sincerely,



Brandy S. Kean
Project Manager

Christopher J. Snider, PE, RG
Associate

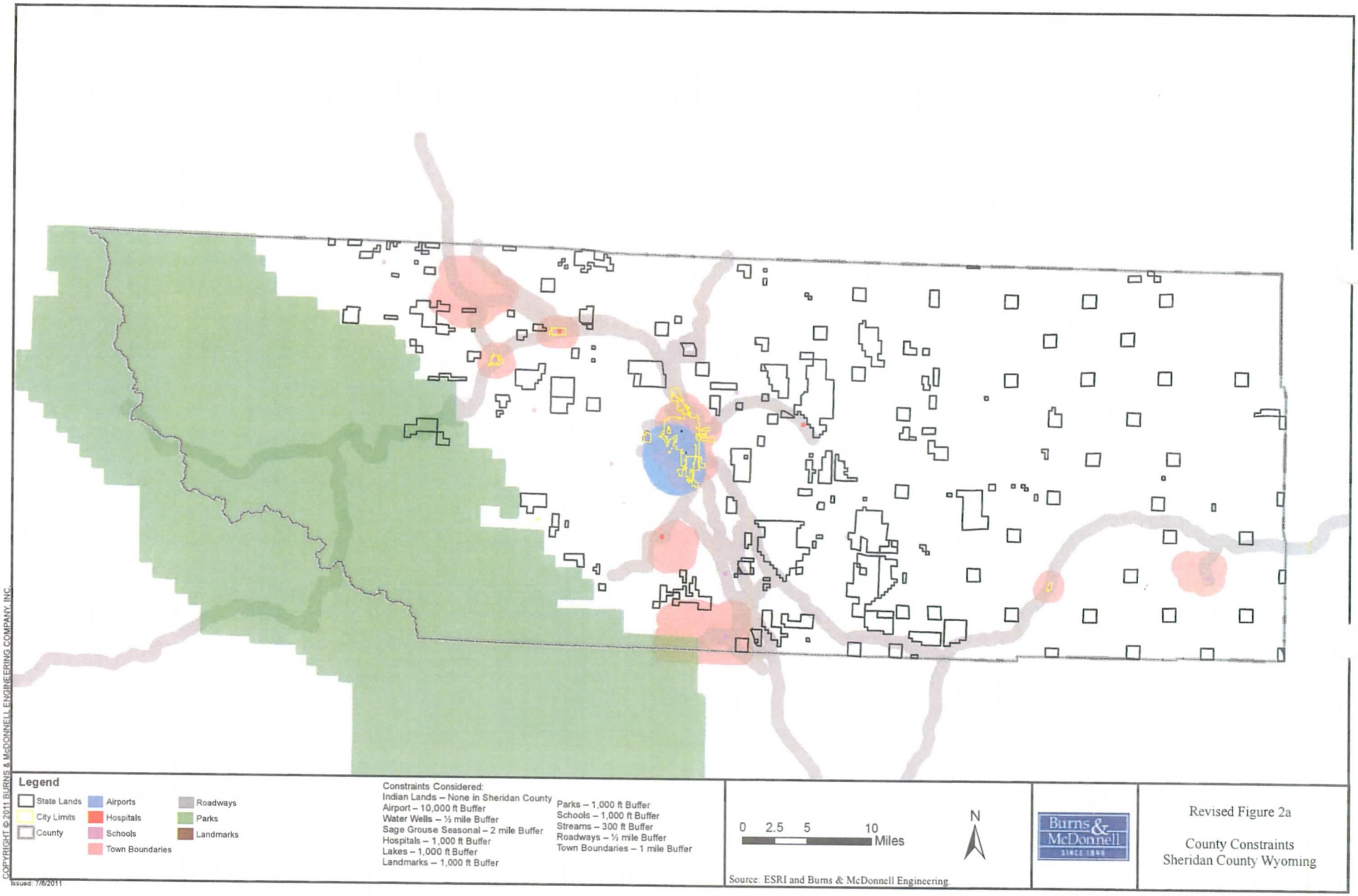
BSK/CJS

Attachments: Attachment A – Revised Location Restriction Maps
Attachment B – USDA Web Soil Survey Constraints
Attachment C – Hauling Impacts

Cc: Mayor Dave Kinskey, City of Sheridan
Mr. Nic Bateson, P.E., Public Works Director, City of Sheridan
Mr. Dan Roberts, P.E., Utilities Manager, City of Sheridan
Mr. Charles Martineau, Solid Waste Manager, City of Sheridan
Mr. John Corra, Director, WDEQ
Mr. Dale Anderson, Program Principal, WDEQ SHWD
Ms. Carol Stark, Environmental Scientist, WDEQ SHWD
Mr. Dave Fuller, Appraiser, Wyoming Office of State Lands & Investments
Rod Liesinger, P.E. Sheridan County Public Works Director

Attachment A

Revised Location Restriction Maps


Legend
State Lands
City Limits
County
Airports
Hospitals
Schools
Town Boundaries
Roadways
Parks
Landmarks
Constraints Considered:
Indian Lands – None in Sheridan County
Airport – 10,000 ft Buffer
Water Wells – ½ mile Buffer
Sage Grouse Seasonal – 2 mile Buffer
Hospitals – 1,000 ft Buffer
Lakes – 1,000 ft Buffer
Landmarks – 1,000 ft Buffer
Parks – 1,000 ft Buffer
Schools – 1,000 ft Buffer
Streams – 300 ft Buffer
Roadways – ½ mile Buffer
Town Boundaries – 1 mile Buffer
0 2.5 5 10
Miles
N
Source: ESRI and Burns & McDonnell Engineering
Burns & McDonnell
SINCE 1898
Revised Figure 2a
County Constraints
Sheridan County Wyoming
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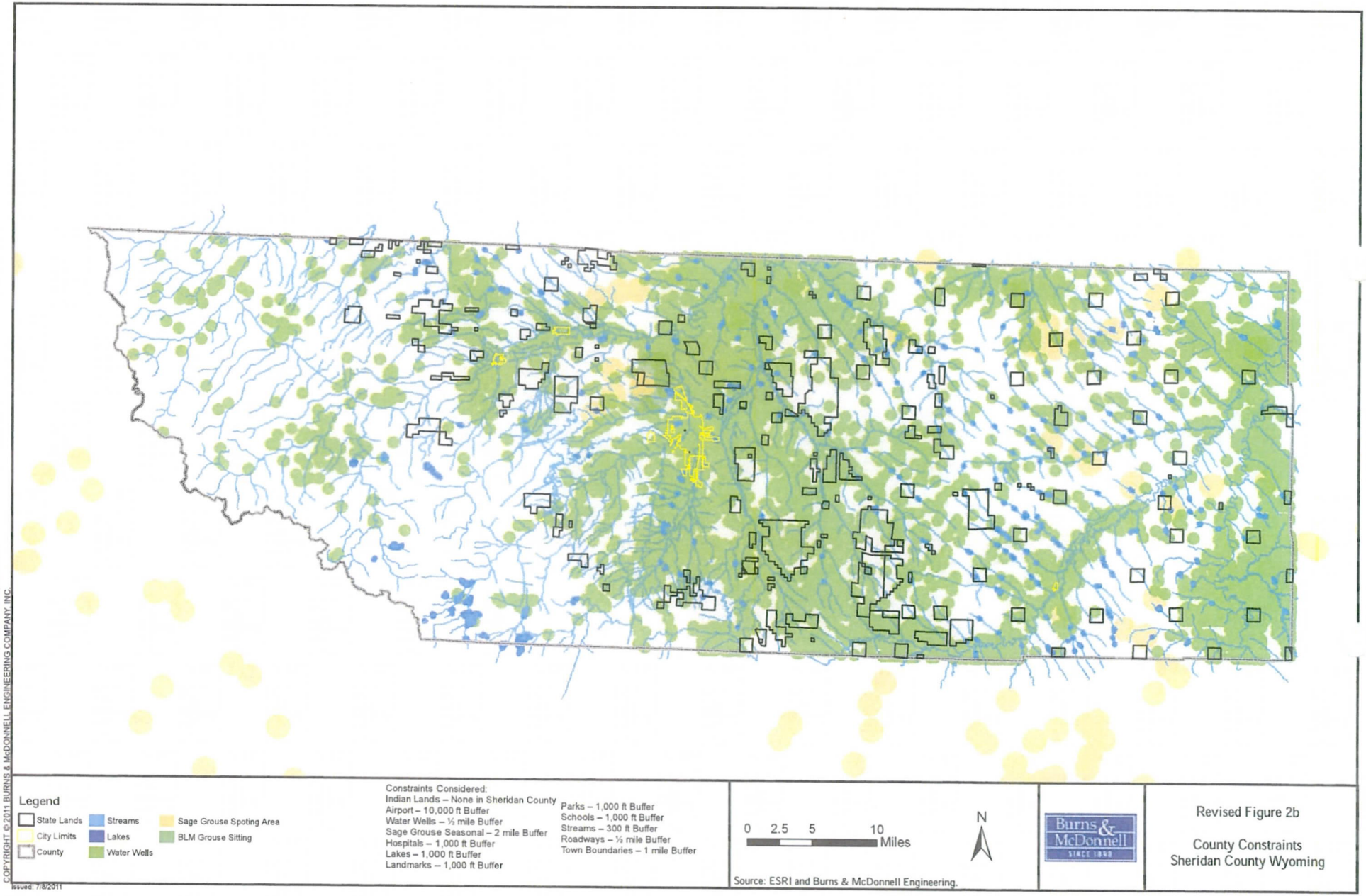
COPYRIGHT © 2011 BURNS & McDONNELL ENGINEERING COMPANY, INC.
Issued: 7/8/2011


Legend
State Lands
City Limits
County
Streams
Lakes
Water Wells
Sage Grouse Spoting Area
BLM Grouse Sitting
Constraints Considered:
Indian Lands – None in Sheridan County
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Water Wells – ½ mile Buffer
Sage Grouse Seasonal – 2 mile Buffer
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Burns & McDonnell
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Revised Figure 2b
County Constraints
Sheridan County Wyoming
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COPYRIGHT © 2011 BURNS & McDONNELL ENGINEERING COMPANY, INC.
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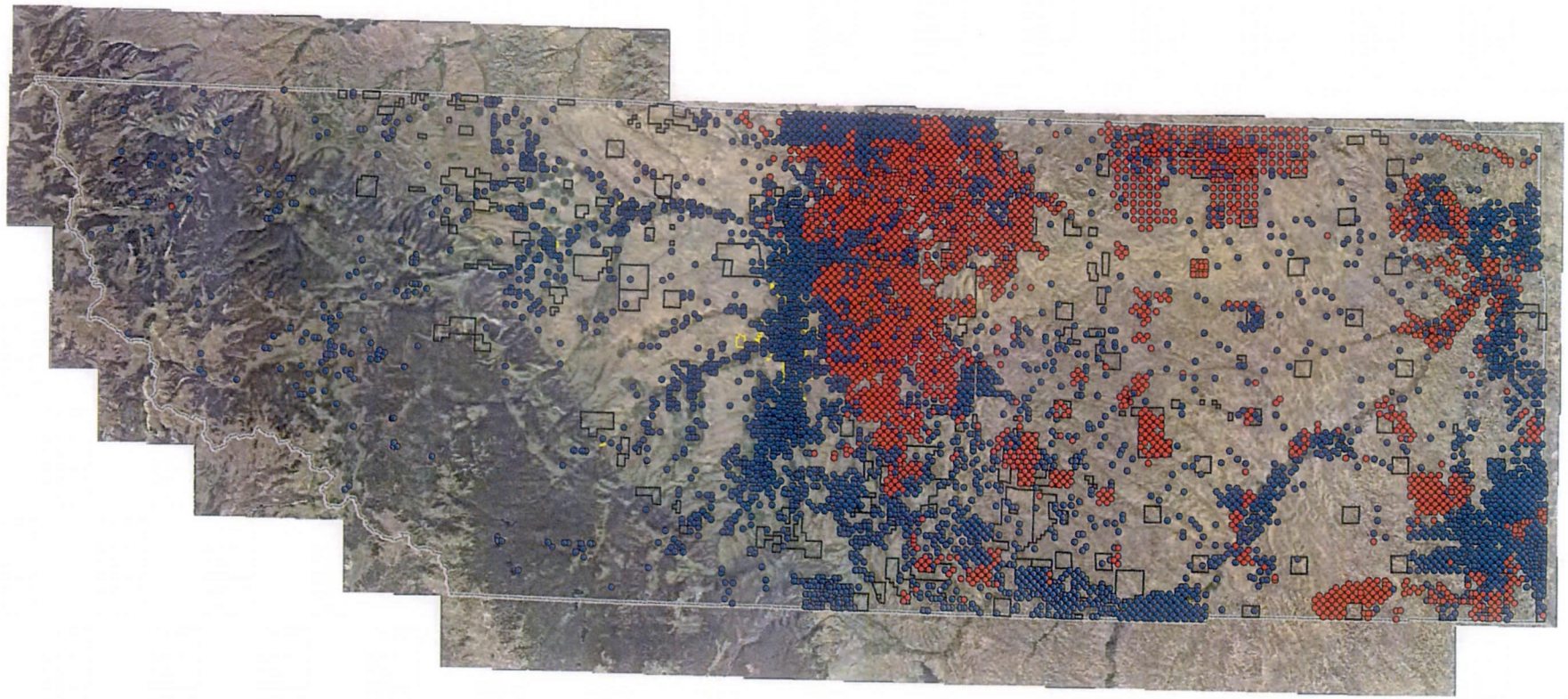

Legend

State Lands
County
City Limits
Coal Bed Methane (CBM)
State Engineer's Office Wells (no CBM)

Constraints Considered:
Indian Lands – None in Sheridan County
Airport – 10,000 ft Buffer
Water Wells – ½ mile Buffer
Sage Grouse Seasonal – 2 mile Buffer
Hospitals – 1,000 ft Buffer
Lakes – 1,000 ft Buffer
Landmarks – 1,000 ft Buffer
Parks – 1,000 ft Buffer
Schools – 1,000 ft Buffer
Streams – 300 ft Buffer
Roadways – ½ mile Buffer
Town Boundaries – 1 mile Buffer

0 2.5 5 10 Miles

N

Source: ESRI and Burns & McDonnell Engineering

Burns & McDonnell SINCE 1898

Revised Figure 2c

County Constraints
Sheridan County Wyoming

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Issued: 7/8/2011

Legend

State Lands
County
City Limits
Constraints

Constraints Considered:
Indian Lands – None in Sheridan County
Airport – 10,000 ft Buffer
Water Wells – ½ mile Buffer
Sage Grouse Seasonal – 2 mile Buffer
Hospitals – 1,000 ft Buffer
Lakes – 1,000 ft Buffer
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Schools – 1,000 ft Buffer
Streams – 300 ft Buffer
Roadways – ½ mile Buffer
Town Boundaries – 1 mile Buffer

0 2.5 5 10 Miles

N

Source: ESRI and Burns & McDonnell Engineering.

Burns & McDonnell SINCE 1898

Revised Figure 3a

County Constraints
Sheridan County Wyoming

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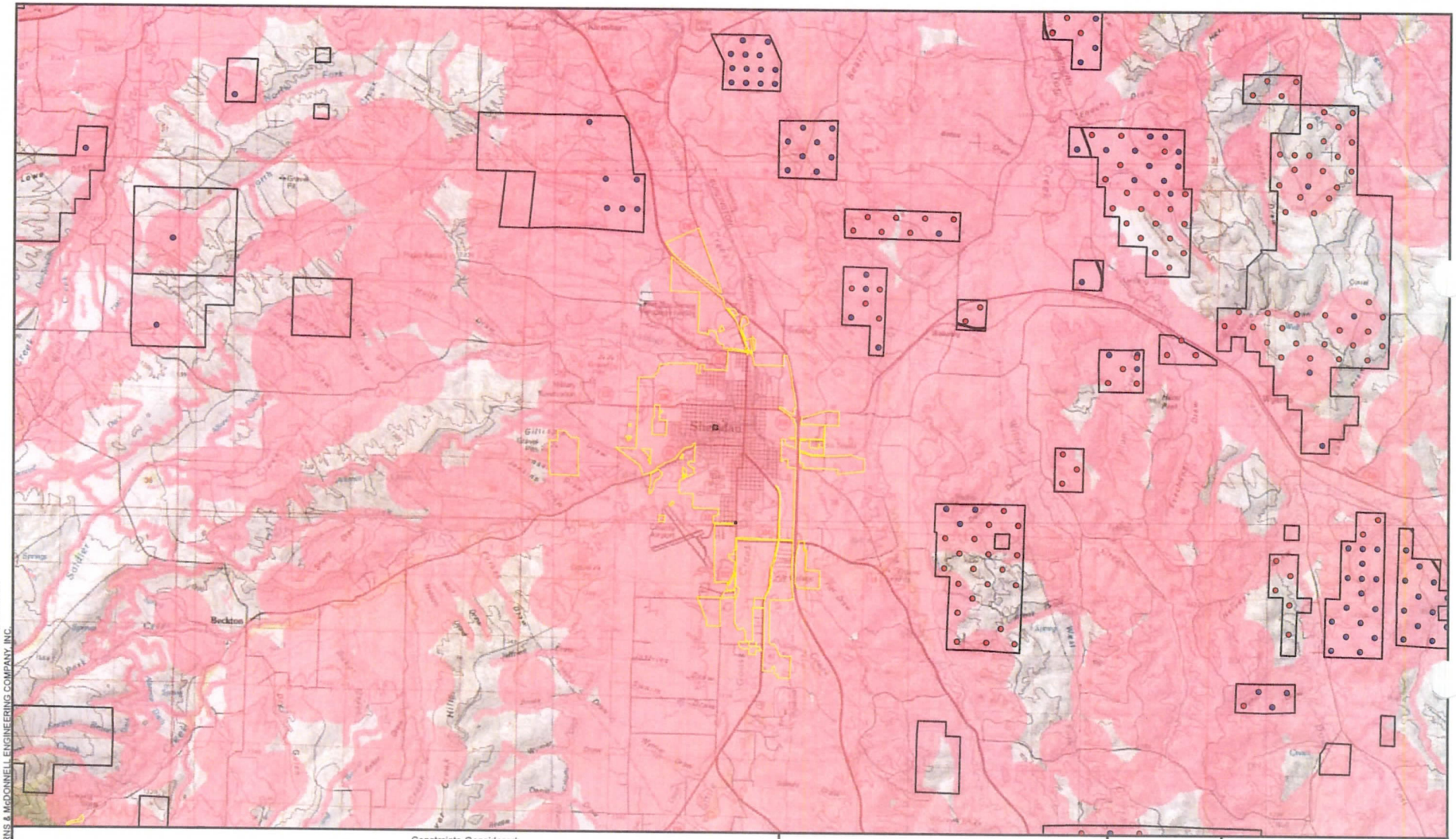

Legend

State Lands
City Limits
County
Constraints
Coal Bed Methane (CBM)
State Engineer's Office Wells (no CBM)

Constraints Considered:
Indian Lands – None in Sheridan County
Airport – 10,000 ft Buffer
Water Wells – ½ mile Buffer
Sage Grouse Seasonal – 2 mile Buffer
Hospitals – 1,000 ft Buffer
Lakes – 1,000 ft Buffer
Landmarks – 1,000 ft Buffer
Parks – 1,000 ft Buffer
Schools – 1,000 ft Buffer
Streams – 300 ft Buffer
Roadways – ½ mile Buffer
Town Boundaries – 1 mile Buffer

Note: Wells located on property not owned by the State of Wyoming are not shown.

0 1 2 Miles

N

Source: ESRI and Burns & McDonnell Engineering.

Burns & McDonnell SINCE 1898

Revised Figure 3b

County Constraints
Sheridan County Wyoming

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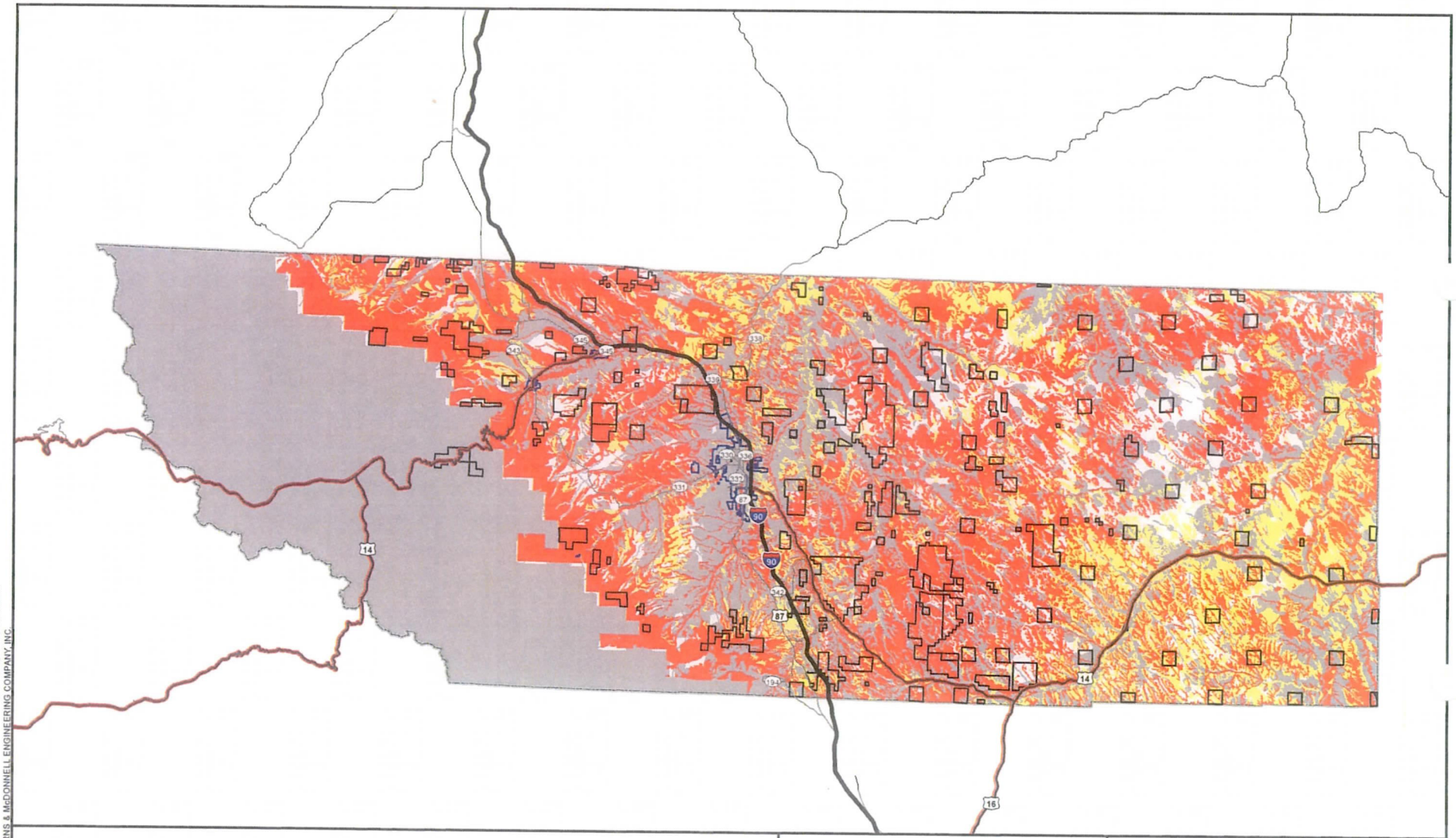
Issued: 7/8/2011

Attachment B

USDA Web Soil Survey Constraints


Legend
State Lands
City Limits
County
WEDQ Rule Constraints
USDA-NRCS Somewhat Limited Soil
USDA-NRCS Very Limited Soil
0 2.5 5 10
Miles
N
Source: ESRI and Burns & McDonnell Engineering
Burns & McDonnell
SINCE 1898
Attachment B
Figure 1
USDA Web Soil Survey Constraints
Sheridan County Wyoming
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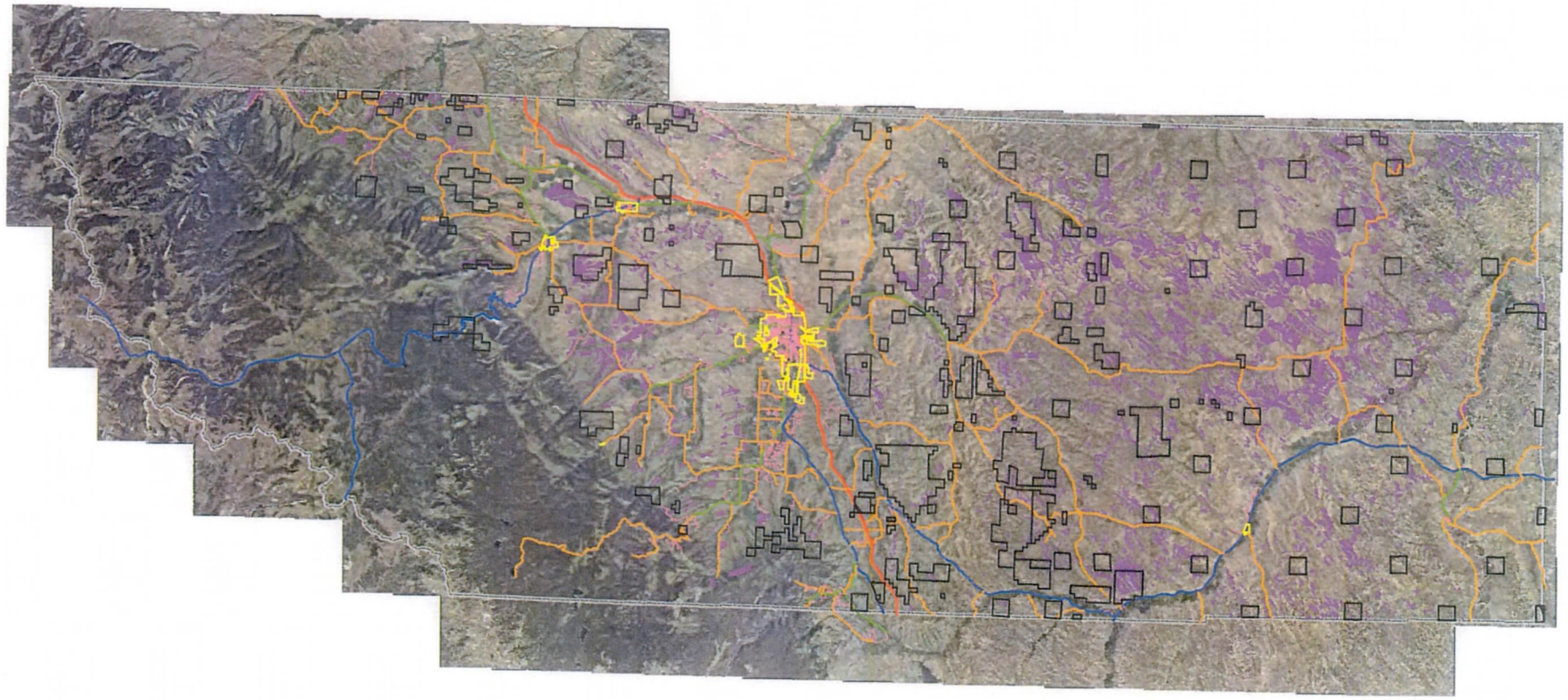
COPYRIGHT © 2011 BURNS & McDONNELL ENGINEERING COMPANY, INC.
Issued: 7/8/2011



Legend

State Lands
City Limits
County
INTERSTATE
US HIGHWAY
WYOMING STATE HIGHWAY
SHERIDAN COUNTY ROAD
PUBLIC ROAD
Areas not constrained by WDEQ rules or USDA-NRCS soil survey

0 2.5 5 10 Miles

N

Source: ESRI and Burns & McDonnell Engineering

Burns & McDonnell SINCE 1898

Attachment B
Figure 2
WDEQ/USDA Web Soil Survey
Unconstrained Areas
Sheridan County Wyoming

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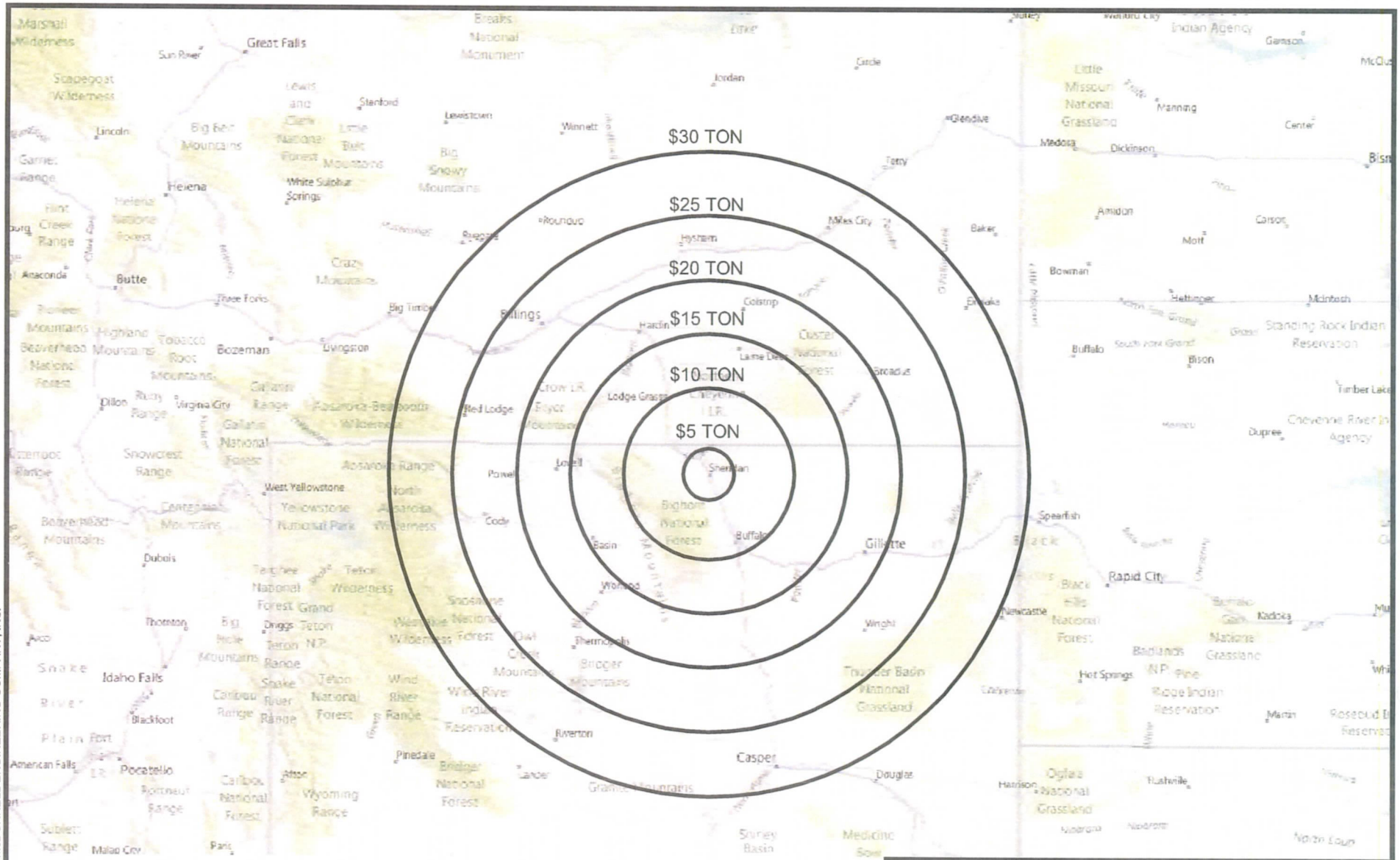
Issued: 7/8/2011

Attachment C

Hauling Impacts



NOTE:

1. DISTANCES AND COSTS SHOWN ARE APPROXIMATE AND WOULD REQUIRE FURTHER REFINEMENT BASED ON ACTUAL TRAVEL ROUTES, SPEED AND PAYLOADS

0 50 100

SCALE IN MILES

N

Burns & McDonnell
SINCE 1898

ATTACHMENT C

HAUL COST VS. DISTANCE
SHERIDAN COUNTY, WYOMING

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EXHIBIT

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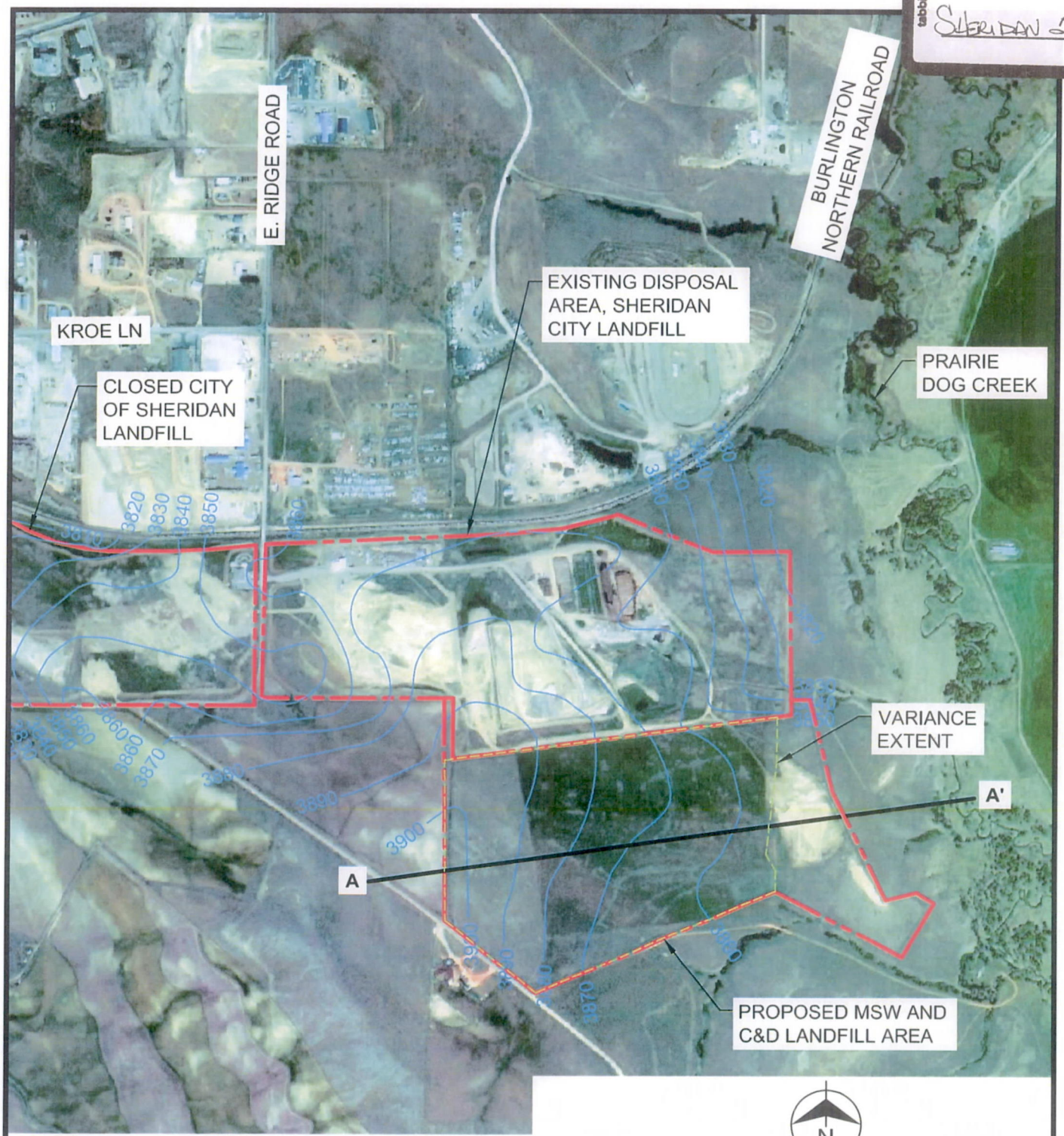

LEGEND

GROUNDWATER CONTOUR (DASHED WHERE INFERRED)

PROPERTY LINE

VARIANCE EXTENT

NOTE:

1. BOUNDARY LOCATIONS ARE APPROXIMATE.

Burns & McDonnell SINCE 1898

PROPOSED MSW AND C&D LANDFILLS
CROSS SECTION A-A'
SHERIDAN, WYOMING

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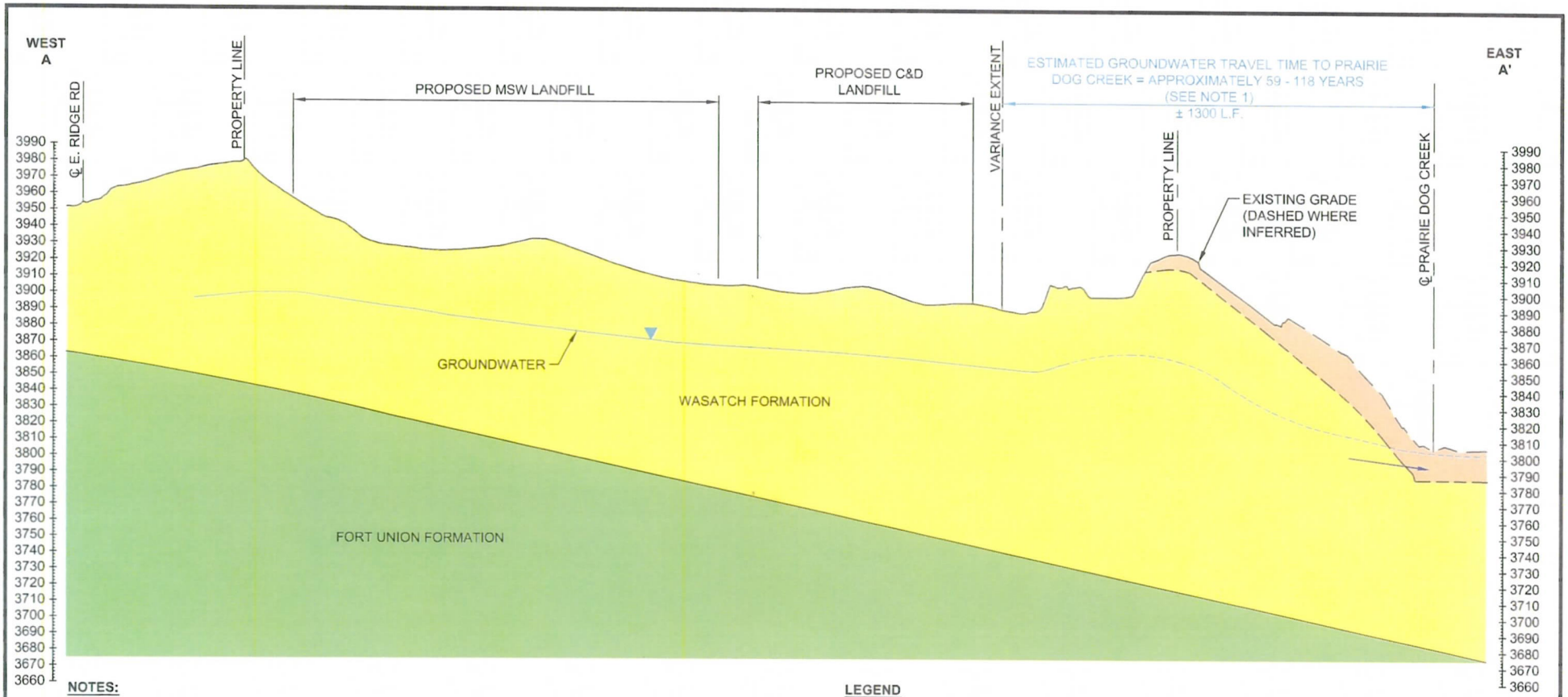


NOTES:

1. TRAVEL TIME ASSUMPTIONS FOR GROUNDWATER:

   A. BASED ON HYDROGEOLOGIC DATA OBTAINED FROM INVESTIGATIONS PERFORMED WITHIN THE PROPOSED LANDFILL EXPANSION AREA, ESTIMATED GROUNDWATER VELOCITIES WERE CALCULATED USING AN AVERAGE HYDRAULIC CONDUCTIVITY (K) OF 0.27 FT/DAY, AVERAGE HYDRAULIC GRADIENT (I) OF 0.022 FT/FT, AND EFFECTIVE POROSITY (NE) RANGING BETWEEN 10%-20%. GROUNDWATER VELOCITY CALCULATION: V (FT/DAY) = [(K X I) / NE]

   B. DUE TO UNAVAILABLE HYDROGEOLOGIC DATA OUTSIDE OF THE PROPOSED LANDFILL EXPANSION AREA, THE ACTUAL TRAVEL TIME OF GROUNDWATER TO PRAIRIE DOG CREEK MAY VARY. TRAVEL TIMES ARE LIKELY TO INCREASE WHEN FACTORING IN LOCALIZED GROUNDWATER FLOW PATHS (TYPICALLY FOLLOWING SURFACE TYPOGRAPHY) TOWARD PRAIRIE DOG CREEK. BASED ON SURFACE TOPOGRAPHY, HIGHER HYDRAULIC GRADIENTS MAY BE EXPECTED TOWARD PRAIRIE DOG CREEK RESULTING IN DECREASED GROUNDWATER TRAVEL TIMES. HOWEVER, A HIGHER HYDRAULIC GRADIENT IS ALSO AN INDICATOR OF LOWER HYDRAULIC CONDUCTIVITY MATERIALS IN THE SUBSURFACE, THUS DECREASING GROUNDWATER VELOCITY AND INCREASING TRAVEL TIMES.

2. WASATCH FORMATION IS LOCALLY OVERLAIN BY A THIN COLLUVIUM LAYER.

LEGEND

- WASATCH FORMATION (SEE NOTE 2)
- FORT UNION FORMATION
- ALLUVIUM / COLLUVIUM (DASHED WHERE INFERRED)
- GROUNDWATER FLOW LINES
- GROUNDWATER SURFACE (DASHED WHERE INFERRED)

HORIZONTAL 0 300' 600' SCALE IN FEET

VERTICAL 0 60' 120' SCALE IN FEET

Burns & McDonnell SINCE 1898

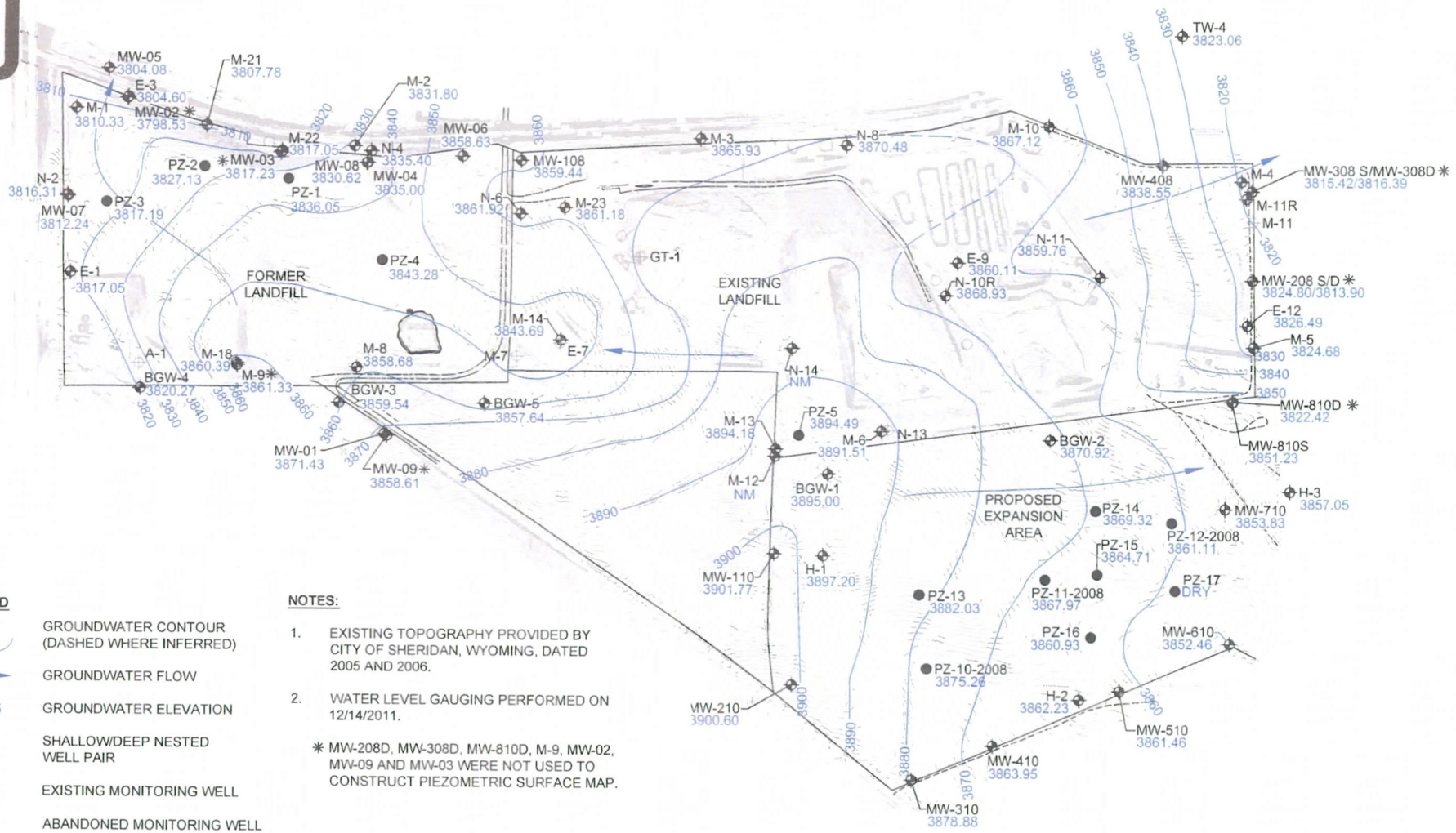
CROSS SECTION A-A'
PROPOSED MSW AND C&D LANDFILLS
SHERIDAN, WYOMING

EXHIBIT

Sheridan 2b

tabbies

1145



LEGEND

- GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW
- 3900.45 GROUNDWATER ELEVATION
- S/D SHALLOW/DEEP NESTED WELL PAIR
- EXISTING MONITORING WELL
- ABANDONED MONITORING WELL
- EXISTING PIEZOMETER
- QUARTERLY LEACHATE SAMPLE
- NM NOT MEASURED

NOTES:

1. EXISTING TOPOGRAPHY PROVIDED BY CITY OF SHERIDAN, WYOMING, DATED 2005 AND 2006.
2. WATER LEVEL GAUGING PERFORMED ON 12/14/2011.

✳ MW-208D, MW-308D, MW-810D, M-9, MW-02, MW-09 AND MW-03 WERE NOT USED TO CONSTRUCT PIEZOMETRIC SURFACE MAP.

N

0 500' 1000'

SCALE IN FEET

Burns & McDonnell SINCE 1898

Figure 1-4
PIEZOMETRIC SURFACE MAP
DECEMBER 2011
CITY OF SHERIDAN
LANDFILL
SHERIDAN, WYOMING

K:\ENV\SHERIDAN WYOMING\SITE\61107\CAD\REPORT FIGURES\61107-PIEZ MAP-FIG1-4_DEC2011.DWG 3/5/2012 8:59 AM AGUMINA

EXHIBIT
tabbies
SHERIDAN 27

City of Sheridan Landfill
Waste Haul Cost Versus Distance
May 2012

Miles	Fixed Cost Per Ton	Variable Cost per Ton	Total Cost Per Ton
0	$ -	$ -	$ -
5	$ -	$ 2.11	$ 2.11
10	$ -	$ 4.23	$ 4.23
15	$ -	$ 6.34	$ 6.34
20	$ 2.39	$ 3.76	$ 6.14
25	$ 2.39	$ 4.70	$ 7.08
30	$ 2.39	$ 5.64	$ 8.02
35	$ 2.39	$ 6.57	$ 8.96
40	$ 2.39	$ 7.51	$ 9.90
45	$ 2.39	$ 8.45	$ 10.84
50	$ 2.39	$ 9.39	$ 11.78
55	$ 2.39	$ 10.33	$ 12.72
60	$ 2.39	$ 11.27	$ 13.66
65	$ 2.39	$ 12.21	$ 14.59
70	$ 2.39	$ 13.15	$ 15.53
75	$ 2.39	$ 14.09	$ 16.47
80	$ 2.39	$ 15.03	$ 17.41
85	$ 2.39	$ 15.97	$ 18.35
90	$ 2.39	$ 16.91	$ 19.29
95	$ 2.39	$ 17.84	$ 20.23
100	$ 2.39	$ 18.78	$ 21.17
105	$ 2.39	$ 19.72	$ 22.11
110	$ 2.39	$ 20.66	$ 23.05
115	$ 2.39	$ 21.60	$ 23.99
120	$ 2.39	$ 22.54	$ 24.93
125	$ 2.39	$ 23.48	$ 25.86
130	$ 2.39	$ 24.42	$ 26.80
135	$ 2.39	$ 25.36	$ 27.74
140	$ 2.39	$ 26.30	$ 28.68
145	$ 2.39	$ 27.24	$ 29.62
150	$ 2.39	$ 28.18	$ 30.56

Notes:

1. Fixed Cost/Ton = Fixed Cost Per Day / (Average Annual Tonnage/Days of Operation)
2. Variable Cost/Ton = Variable Cost Per Mile x 2 x (Miles/Average Payload)
3. Costs are appoximate and would require further refinement based on actual travel routes, speed, and payloads.

City of Sheridan Landfill
Waste Haul Cost Versus Distance
May 2012

FIXED HAUL COST SUMMARY		
Capital Cost Per Tractor, $/yr	$	14,400
License, Personal Property, Tax, and Insurance, $/yr	$	12,000
Allowance for Spare Tractors, $/yr	$	6,600
Capital Cost Per Trailer, $/yr	$	5,850
Allowance For Spare Trailers, $/yr	$	2,000
Labor Per Unit, $/yr	$	40,000
Trailer Repairs, $/yr	$	9,600
Subtotal, $/yr	$	90,450
Overhead (15%), $/yr	$	13,568
Total Annual Fixed Cost, $/yr	$	104,018
Fixed Cost Per Day, $/day	$	345.57
Fixed Cost Per Ton, $/ton	$	2.39
VARIABLE HAUL COST SUMMARY (0-19 mi)		
Fuel, $/gal. diesel	$	5.00
Mileage, MPG		5
Fuel Charge, $/mile	$	1.00
Oil, Lube, Service, Etc., $/mile	$	0.01
Tires: 20,000 Miles/Set, $/mile	$	0.30
Tractor Repairs, $/mile	$	0.16
Subtotal, $/mile	$	1.47
Overhead (15%), $/mile	$	0.22
Variable Cost per Mile, $/mile	$	1.69
Average Annual Tonnage, tons/yr		43,600
Days of Operation, days/yr		301
Average Payload, tons/load		8
Trips Per Day		37
Average Speed of Truck, MPH		45
VARIABLE HAUL COST SUMMARY (20-150 mi)		
Fuel, $/gal. diesel	$	5.00
Mileage, MPG		5
Fuel Charge, $/mile	$	1.00
Oil, Lube, Service, Etc., $/mile	$	0.01
Tires: 20,000 Miles/Set, $/mile	$	0.30
Tractor Repairs, $/mile	$	0.16
Subtotal, $/mile	$	1.47
Overhead (15%), $/mile	$	0.22
Variable Cost per Mile, $/mile	$	1.69
Average Annual Tonnage, tons/yr		43,600
Days of Operation, days/yr		301
Average Payload, tons/load		18
Trips Per Day		11
Average Speed of Truck, MPH		50

Note:

1. Costs are appoximate and would require further refinement based on actual travel routes, speed, and payloads.

EXHIBIT

tabbies

SHERIDAN 28 NOVEMBER

Tipping Fee Projections
City of Sheridan Landfill
May 2012

Disposal Option	Tipping Fee (cost/ton)				Notes
	2012	2013	2014	2015	
Landfilling (proposed expansion)	$ 93	$ 102	$ 112	$ 118	
Curbside Recycling (assumes proposed expansion)	$ 120	$ 129	$ 139	$ 145	An additional 1400 tons of diversion is assumed.
Hauling to Casper (150 mile one-way)	---	---	$ 236	$ 243	Assumes transfer commences in 2014; $30/ton for hauling, $38 tipping fee in Casper

Note:

1. Costs are in 2012 dollars.
2. Costs are approximate and would require further refinement based on hauling and collection contracts and time of implementation.

1148

EXHIBIT tabbies SHERIDAN 29

Landfill Tipping Fee Comparison
Sheridan, Wyoming Region
May 2012

Landfill	Tipping Fee (Cost/Ton)	Comments
Wyoming Landfills		
Sheridan	$93	
Park County (Powell)	$90	
Park County (Cody)	$90	
Teton County	$90	
Fremont County (Lander, Riverton, Dubois)	$80	
Johnson County (Buffalo)	$75	
Douglas	$63	
Campbell County (Gillette)	$60	
Sweet Water County (Rock Springs)	$55	
Lincoln County (Thayne)	$50	
Casper	$45/$58.5	In county/out of county
Lincoln County (Cokeville)	$44	
Lincoln County (Kemmerer)	$40	
Green River	$37.45/$69.55	In city/outside of city
Torrington	$30/$50	@ landfill/@ bailer $10/yd, assume 400 lb/cy
Landfills with the Region		
Rapid City, SD	$59	
Custer-Fall River (Edgemont, SD)	$52	
Pierre, SD	$40	
Idaho Falls, ID	$10/$38	In county/out of county
Dickinson, ND	$35	
Larimer County (Fort Collins, CO)	30	$6.05/cy, assumed 400 lb/cy
Billings, MT	$15/$16.5	In city/Yellowstone County

Notes:

1. Tipping fees were obtained from City or County websites and by contacting landfill operators.

EXHIBIT

tabbies

SHERIDAN 30

Memorandum

Date: November 16, 2011

To: Dan Roberts, PE
Charles Martineau

From: Brandy Kean, PE

Subject: Transfer Station Evaluation
Sheridan Solid Waste Disposal Facility
BMcD Project Number 63820

The City of Sheridan applied for and was recently granted a variance from the Wyoming Department of Environmental Quality (WDEQ), which allows the City to initiate the permitting process with WDEQ for a proposed municipal solid waste (MSW) and construction and demolition (C&D) landfill. The proposed development is located directly south of and adjacent to the existing City of Sheridan Solid Waste Disposal Facility.

The City strives to continue to provide the residents of Sheridan County the most economically sound solid waste disposal alternative. Therefore, prior to moving forward with expansion area permitting, the City requested Burns & McDonnell evaluate the feasibility of transfer station development and waste hauling to the Casper, Wyoming Regional Landfill. In this analysis, it was assumed transfer operations would commence in 2014, at which time all MSW waste that is currently accepted at the Sheridan Landfill would be hauled to Casper.

Waste hauling to Casper was evaluated by the City in the 2009 Integrated Solid Waste Management Plan (ISWMP). The 2009 ISWMP was intended to be a high-level analysis of waste alternatives, and the conclusions of the report confirmed the findings of several previous solid waste planning efforts undertaken by the City. Historic economic analysis has indicated that expanding the Sheridan Landfill as requested in the variance is the most feasible and economically prudent waste disposal option for the residents of Sheridan County. However, because there is now an operating regional landfill (Casper) and state-specific waste transfer data, several variables in the ISWMP could be further refined to present a more accurate comparison of present-day transfer costs.

Burns & McDonnell used the 2011 the Sheridan Landfill Cost of Service and Rate Design Report to compare two disposal alternatives:

1) Continue landfilling at the Sheridan Landfill, which includes landfill development on the property south of the existing facility.
2) Construct a transfer station and discontinue MSW disposal in Cell 9. MSW would be hauled to the Casper Regional Landfill. C&D material would continue to be disposed of in this Cell until capacity is reached. All other current landfill operations would continue.

Data was obtained from the City of Casper, the WDEQ, and two Wyoming municipalities who are currently transferring waste, Cheyenne and Baggs, and engineering best judgment to complete this analysis.

The Casper Regional Landfill will accept waste from other municipalities either loose or baled and bagged, and a Casper Landfill buy-in fee is calculated based on how waste will be delivered, anticipated annual tonnage, and other undisclosed factors. Additionally, tipping fees are also based on the state in which waste is delivered to Casper. A summary of Casper's estimated buy-in fee and tipping rates is shown below in Table 1.

Table 1. 2011 Casper Regional Landfill Fees for the City of Sheridan

	Buy-In Fee	**Tipping Fee (cost/ton)**
Loose MSW	$1,411,330	$45
Baled and Bagged MSW	$867,750	$38

It was assumed the transfer station would be located on the same property south of the landfill that is intended for landfill development due to space constrictions at the existing landfill site. Transfer station capital requirements to process loose waste and baled and bagged waste were

estimated to be $13.5M and $13.9M, respectively. Capitals costs to bale and bag MSW were slightly higher because of the need for two balers.

Both hauling loose and hauling baled and bagged were evaluated. Both analyses accounted for transfer station capital, transfer station annual O&M, continuing all landfill operations except MSW disposal, exclusion of the expansion area capital costs, and miscellaneous O&M adjustments. Both options assumed waste would be hauled to Casper by a contract hauler. It was assumed that the haul distance would be 150 miles one-way from Sheridan to Casper.

Because the Sheridan Landfill would continue to provide all existing services (recycling, green waste, C&D landfilling, HHW, etc.), landfill O&M that includes a transfer station is much greater than the O&M required to operate only a landfill. When comparing landfilling vs. transferring, whether loose or bagged and baled, transfer operations will cost the City approximately $2 million dollars more than landfilling alone. This significant disparity is primarily due to MSW haul costs and the Casper tipping fee. Estimated annual transfer station O&M is included in Table 2.

Table 2. Anticipated Transfer Station Annual O&M (in 2014 dollars[1])

Description	Cost/Year
Personnel	$69,000
Facility O&M	$256,000
Casper Tipping Fee ($38/ton[2])[3]	$897,000
Haul Cost ($30/ton)[3]	$708,000
Total Additional O&M	**$1,930,000**

[1]The transfer station was assumed to be constructed in 2014; therefore, numbers are in 2014 dollars.
[2]Assumes waste is baled and bagged at the Sheridan transfer station. If waste is hauled loose, the tipping fee increases $7/ton, to $45/ton.
[3]Assumes 23,600 tons of MSW will be transferred in 2014.

The 2011 the Sheridan Landfill Cost of Service and Rate Design Model was modified as indicated above to obtain projected rates for waste hauling. A comparison of projected rates for hauling vs. projected rates for continuing current operations is shown below. Rate projections were estimated for a 10-year period.

Table 3. Projected 10-Year Tipping Fee Comparison

	Projected Rates				
Disposal Option	**2012**	**2013**	**2014**	**2015**	**2016-2021**
Landfilling (expansion)	$93.00	$102.00	$112.00	$118.00	$124.00
Loose Waste Hauling	$93.00	$102.00	$236.00	$243.00	$243.00
Baled & Bagged Waste Hauling	$93.00	$102.00	$235.00	$242.00	$242.00

As indicated in Table 3, transfer operations will be much more costly to the residents of the City of Sheridan in the future. In the long-term (2016-2021), landfill tipping fees will be approximately 95% higher than if the City were to continue with landfill operations and expansion as currently planned. The significant rate difference between landfill and hauling is primarily attributable to the significant additional annual O&M required for transfer operations. Approximately $2M of additional money is needed per year to fund transfer operations alone.

The results of this analysis are consistent with the City's intention to move forward with permitting the property south of the existing landfill. The findings presented herein clearly indicate that landfill expansion is the most cost effective waste management option for landfill patrons.

EXHIBIT

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SHERIDAN 31

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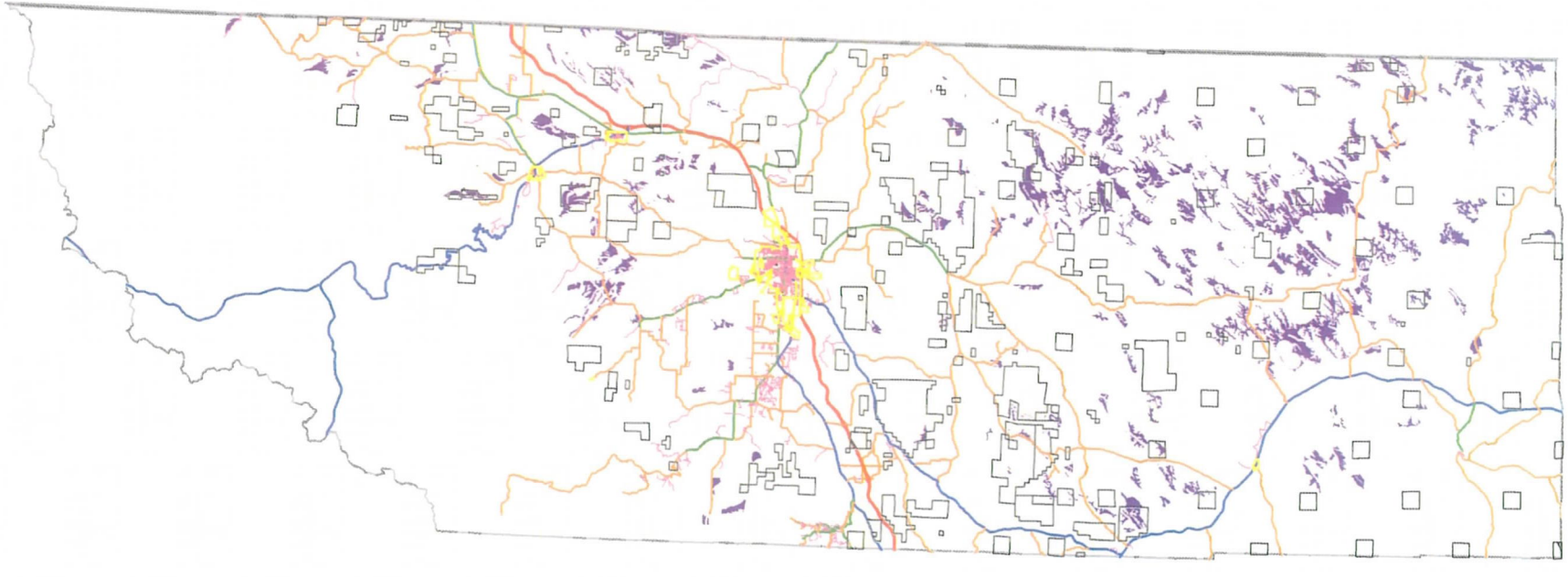

Legend

State Lands
City Limits
County
INTERSTATE
US HIGHWAY
WYOMING STATE HIGHWAY
SHERIDAN COUNTY ROAD
PUBLIC ROAD
Areas not constrained by WDEQ rules or USDA-NRCS soil survey

Notes:
1.) Areas < 100 acres were excluded from consideration
2.) Constraints not evaluated on this map include distance to rural residences, wetlands, National Historic Preservation Act, Endangered Species Act, big game winter range breeding grounds, and hydrogeologic conditions.

0 2.5 5 10 Miles

N

Source: ESRI and Burns & McDonnell Engineering.

Burns & McDonnell SINCE 1898

Revised County Constraints
WDEQ/USDA Web Soil Survey
Unconstrained Areas
Sheridan County Wyoming

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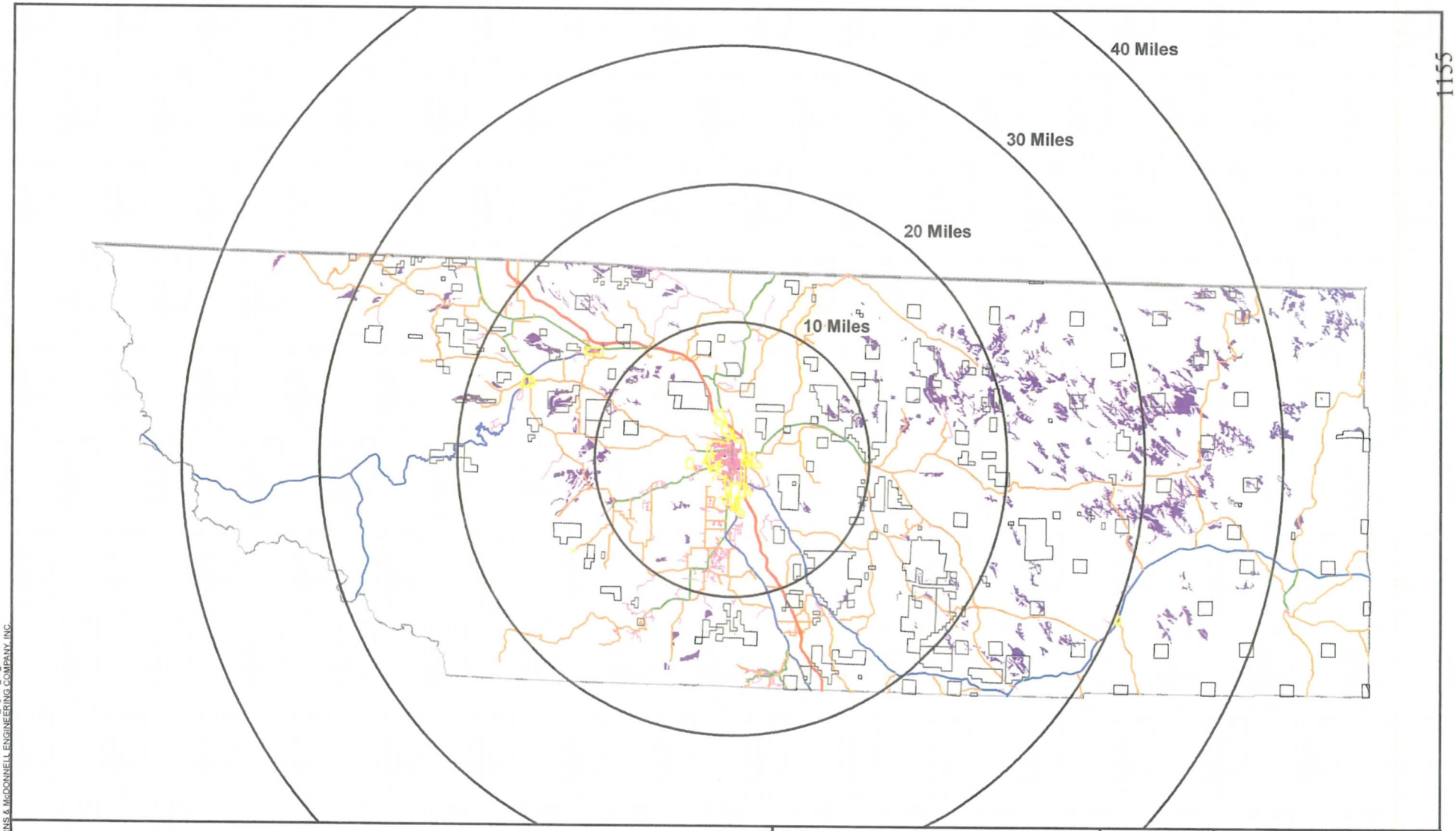
Issued: 5/4/2012



Legend

- State Lands
- City Limits
- County
- INTERSTATE
- US HIGHWAY
- WYOMING STATE HIGHWAY
- SHERIDAN COUNTY ROAD
- PUBLIC ROAD
- Travel Distances
- Areas not constrained by WDEQ rules or USDA-NRCS soil survey

Notes:
1.) Areas < 100 acres were excluded from consideration
2.) Constraints not evaluated on this map include distance to rural residences, wetlands, National Historic Preservation Act, Endangered Species Act, big game winter range breeding grounds, and hydrogeologic conditions.

0 2.5 5 10 Miles

N

Source: ESRI and Burns & McDonnell Engineering.

Burns & McDonnell SINCE 1898

Revised County Constraints
w/ Travel Distances
WDEQ/USDA Web Soil Survey
Unconstrained Areas
Sheridan County Wyoming

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Issued: 5/4/2012

PETITIONERS 3

HUGH K. BATTY, MD
1260-1262 W. 5th. Street
Sheridan, WY 82801
Phone (307) 674-6166

KEN W SICKEL, PA-C

November 7, 2011

To Whom It May Concern:

RE: L Dwight French
DOB: 03/25/1938

The above referenced patient is a 73-year-old white male recently examined on 10/31/2011 for problems of increasing shortness of breath. The patient was subjected to pulmonary function tests which showed obstructive defect and hyper-aeration of his lungs. The patient clearly has a diagnosis of chronic obstructive lung disease and also has sensitivity to inhalants. The patient should avoid any and all kinds of particulate matter in his immediate breathing vicinity; this would include dust and smoke. The patient should also avoid any and all chemical irritants in his immediate breathing vicinity as well. If the patient is exposed to these contaminated atmospheres, his lung condition will deteriorate and perhaps could induce life-threatening condition.

Your cooperation in this matter is appreciated.

Sincerely,

HUGH K BATTY, MD, PhD, CMD

HKB/cab

PETITIONERS 4

Office of State Lands & Investments

122 West 25th Street • Herschler Bldg., 3 West • Cheyenne, WY 82002-0600 • 307-777-7331 • 307-777-5400 fax

MEMO

August 25, 2011

TO: Russ Noel, Appraiser Supervisor

FROM: David Fuller, Principal Appraiser

RE: Sheridan Landfill Expansion, SHWD File # 10.526

The following two letters and attached maps pertain to a proposed expansion of an existing landfill located on the east perimeter of the City of Sheridan. The City requested a 102 acre landfill expansion last January, and Burns and McDonnell, an engineering firm headquartered in Kansas City, Missouri, was engaged by the WDEQ Solid and Hazardous Waste Division, to investigate the proposed expansion and to identify alternative sites for possible development of a new city landfill.

Burns and McDonnell contacted OSLI on April 26, 2011 to inquire about the state trust land disposal process, and the call was routed to my desk. I did my best to answer the gentleman's questions, and I have highlighted the paragraphs that specifically pertain to my responses. Those responses became part of the record and argument made by the firm in its recommendation to the DEQ that a new landfill not be developed east or southeast of Sheridan on private or state land.

For the reasons stated, Burns and McDonnell recommended an expansion of the existing landfill as originally applied for by the City. The 102 acre parcel is located directly south of the existing landfill in the S1/2 of Section 25 and NE1/4 of Section 36-54-84 in Sheridan County. The life expectancy of the 102 acre expansion is estimated at 20 years.

State lands of interest to the engineering firm were identified as a large block in the Wyarno area east of Sheridan (north of the Wyarno Road), and a large block just southeast of Sheridan off State Highway 14 where parking and walk-in areas have been developed.

One of the determining factors in the mapping process was the density of domestic and coal bed methane wells which pepper many areas of eastern Sheridan County. In time, as the methane play runs out, more state and private land will open up for possible location of a future landfill east / southeast of Sheridan.

Please share this memo and attached letters and maps with Marty and Brian. I had no idea at the time I answered the engineering firm's questions, that my answers would be plugged into a decision/recommendation. Had the inquiry come back for further comment from our office, I would definitely have referred it on to you and Marty.

Suggestion – Perhaps a "Landfill Proposals" file should be created for these types of inquiries. Also, a "Landfill Proposals" subdirectory in the F:\Land Transactions directory would provide a place to file electronic copies of memos and related information.

PETITIONERS 16

⇨ heridan

Wyoming

Carol Stark <carol.stark@wyo.gov>

Re: Landfill

Dale Anderson (DEQ) <dale.anderson1@wyo.gov>
To: Charles Martineau <CMartineau@sheridanwy.net>
Cc: Tony Baumgartner <TBaumgartner@sheridanwy.net>, Carol Stark <carol.stark@wyo.gov>

Fri, Aug 26, 2011 at 12:48 PM

Charles

Thank you for the notification, and observations regarding the liner not having been involved in the fire.

Dale Anderson
District # 3 Supervisor
Solid Waste Permitting & Corrective Program
Solid and Hazardous Waste Division
Wyoming Department of Environmental Quality
152 N. Durbin, Suite 100
Casper, WY 82601
307-473-3472

Please note my new e-mail address: dale.anderson1@wyo.gov

On Fri, Aug 26, 2011 at 11:46 AM, Charles Martineau <CMartineau@sheridanwy.net> wrote:

Dale,

It was good to see you and Carol at the WSWRA convention. Hope it was as productive for WDEQ as it was for us.

The purpose of this e-mail is to inform you that the Sheridan Landfill had a landfill fire yesterday evening about 8:00 pm. The fire was located in the MSW cell-9. Our best determination, is that it began in a load that most likely came to the landfill as one of the last loads of the day. Therefore, it was mostly a surface fire. The cause of the fire has not been determined and most likely will not be determined. We suspect that it came in on a private hauler truck delivering waste collected from the county. One of the most common causes of fires from rural areas is ashes from burn barrels or moldy hay. While Chemical fires are always possible, we have no evidence of what caused the fire.

As I mentioned above, the fire was quickly extinguished. Some water was used by the fire department to put out the fire that had caught hold of the daily cover tarp. Beyond that, the fire was extinguished with my trained staff using heavy equipment to roll the burning garbage onto the deck where it was smothered with compacted dirt.

I will send you a formal written report when I get a copy of the fire departments report. However, I can report to you that the liner was not involved and was not damaged in any way by this incident. If you have any question

please feel free to call me.

Charles Martineau

Solid Waste Superintendent

City of Sheridan, WY

Phone: (307) 674-8461 ext. 371

E-mail: cmartineau@sheridanwy.net

SOLID AND HAZARDOUS WASTE DIVISION

NOTICE OF INSPECTION

Revised 11/97

___ Resource Conservation and Recovery Act (RCRA), Wyoming Hazardous Waste Rules and Regulations (WHWRR), as amended
X Wyoming Solid Waste Rules and Regulations (WSWRR), Wyoming Solid Waste Guidelines, as amended
___ Wyoming Hazardous Waste Permit Dated ___, as modified and/or amended
X Wyoming Solid Waste Permit Dated May 23, 2011 Extended to March 1, 2012, as modified and/or amended

Date	Inspector	Time IN	Time OUT	RCRA: Gen. ( ) Transp. ( ) TSD ( )	EPA I.D. #	SW File #
9/13/11	Timothy Mee	10:15 AM	11:00 AM			10.526

Fac. Func.	Insp. Type		SW: Municipal X Industrial ( ) Other ___	Facility Name:
Municipal Landfill Type 1	Compliant	X Announced ___ Unannounced		SHERIDAN EXPANSION LANDFILL

Facility Representative(s):	Title:	Street Address:
Charles Martineau	Landfill Manager	83 EAST RIDGE ROAD
Tony Baumgartner	Landfill Supervisor	

Phone # (307) 674-8461	Fax # ( )	City: SHERIDAN	State: WY	Zip: 82801

Reason for Inspection: Entry by Consent (X) ___

X To determine the extent of compliance with the above referenced requirements, which may require the collection of samples, documents, and/or photographs
___ Follow-up inspection to confirm return to compliance
___ Other (Specify) ___
X Complaint (Briefly describe) Odors Emanating from Landfill Compost Area over past couple of weeks.

X Samples, Documents, and/or Photos collected (describe below)

1. Collected Photos of Compost P.G Area.
2. Collected Photos of Construction of EAST Litter Control Area.
3.
4.

Samples requested and received by facility: ( ) Yes ( ) No
If yes: ( ) Duplicate ( ) Split ( ) Photos (To be received when processed)

This inspection has revealed the following solid or hazardous waste management problems for this facility:

Observed only less than moderate odor emanating from northern portion of active compost pile. Facility supervisor informed Department personnel, Mr. Tim Mee that biosolids had been mixed with woodchips, grass, leaves, manure, hay & straw the day before (i.e., September 12, 2011). Odor observed on northern portion of active pile evidently due to wastewater sludge (Biosolids) that were mixed w/ compost on 09/12/11. Observed South to Southwest winds. No odor observed at north and east sides of compost facility.

Other comments or observations: ~~Does~~ EAST fence construction looks good! No violations observed.

The results of this inspection will be reviewed by personnel in the DEQ Solid and Hazardous Waste Division. A final determination of your facility's compliance with applicable regulations will be made following this review. Any supporting documentation requested must be received within 30 days to be considered during this review.

Receipt of this Notice of Inspection is acknowledged. Signature does not constitute agreement with findings.

Tony Baumgartner
Charles Martineau
(Signature of facility representative)

Signature of Lead Inspector
Timothy Mee

Assisting Inspector(s)

SOLID AND HAZARDOUS WASTE DIVISION

NOTICE OF INSPECTION

Revised 11/97

___ Resource Conservation and Recovery Act (RCRA), Wyoming Hazardous Waste Rules and Regulations (WHWRR), as amended

X Wyoming Solid Waste Rules and Regulations (WSWRR), Wyoming Solid Waste Guidelines, as amended

___ Wyoming Hazardous Waste Permit Dated _____, as modified and/or amended

___ Wyoming Solid Waste Permit Dated _____, as modified and/or amended

Date	Inspector	Time IN	Time OUT	RCRA: Gen. ( ) Transp. ( ) TSD ( )	EPA I.D. #	SW File #
4/4/11	Timothy Mac	3:45	5:15 PM			61.100

Fac. Func.	Insp. Type		SW: Municipal ( ) Industrial ( ) Other _____	Facility Name:
Landfill	Complaint	___ Announced X Unannounced		SHERIDAN EXPANSION LANDFILL

Facility Representative(s):	Title:	Street Address:
Charles Martineau	LANDFILL OPERATOR	83 EAST RIDGE ROAD

Phone # (307) 674-8461	Fax # ( )	City:	State	Zip
		SHERIDAN	WY	82801

Reason for Inspection: Entry by Consent ( ) _____

___ To determine the extent of compliance with the above referenced requirements, which may require the collection of samples, documents, and/or photographs

___ Follow-up inspection to confirm return to compliance

___ Other (Specify) _____

X Complaint (Briefly describe) RECEIVED COMPLAINT REGARDING LITTER OFF SITE FROM LANDFILL ON JIM KOLTISKA PROPERTY.

___ Samples, Documents, and/or Photos collected (describe below)

1.

2.

3.

4.

Samples requested and received by facility: ( ) Yes ( ) No

If yes: ( ) Duplicate ( ) Split ( ) Photos (To be received when processed)

This inspection has revealed the following solid or hazardous waste management problems for this facility:

EAST FACILITY GATE INSPECTED ON 02/09/11; OBSERVED NOT YET TO BE REPLACED AS WDEQ REQUIRE ON 02/09/11 COMPLIANT INSPECTION. LANDFILL REPRESENTATIVE CHARLES MARTINEAU PRESENTED SLIDESH "GOOD NEIGHBOR WORKSHOP" SHOWING 3 SOLUTIONS (OPTIONS) FOR INSTALLING LITTER FENCE. INFORMATION PRESENTED TO DEPARTMENT REPRESENTATIVE IS EVIDENCE THAT LANDFILL IS/HAS TAKING/TAKEN PROACTIVE APPROACH TO SOLVE OFF-SITE LITTER PROBLEM. FENCE GATES NOT ~~REPLACED~~ REPLACED AT THIS POINT DUE TO INCLEMENT WEATHER CONDITIONS (I.E., FROZEN/MUDDY GROUND).

Other comments or observations:

FACILITY INFORMED DEPARTMENT REPRESENTATIVE THAT FENCE GATES ON EAST PERIMETER FENCE WILL BE ~~REPLACED~~ TO BE REPLACED W/FENCE BY END OF WEEK 04/08/11. LANDFILL WILL PROVIDE PHOTOS OF REPLACED FENCE ~~AT~~ AT COMPLETION OF FENCE REPLACEMENT. LANDFILL OPERATOR MR. CHARLES MARTINEAU AGREED TO MEET W/ MR. KOLISKA TO DISCUSS AND OBSERVE ~~OFF~~ OFF-SITE LITTER ON MR. KOLTISKA'S PROPERTY AT SOME POINT IN NEAR FUTURE. DEPT. REP. WILL CONTACT MR. KOLTISKA TO SET UP APPOINTMENT FOR SITE VISIT OF KOLTISKA PROPERTY.

The results of this inspection will be reviewed by personnel in the DEQ Solid and Hazardous Waste Division. A final determination of your facility's compliance with applicable regulations will be made following this review. Any supporting documentation requested must be received within 30 days to be considered during this review.

Receipt of this Notice of Inspection is acknowledged. Signature does not constitute agreement with findings.	Signature of Lead Inspector
Charles Martineau	Timothy Mac
(Signature of facility representative)	Assisting Inspector(s)

SOLID AND HAZARDOUS WASTE DIVISION

NOTICE OF INSPECTION

Revised 11/97

___ Resource Conservation and Recovery Act (RCRA), Wyoming Hazardous Waste Rules and Regulations (WHWRR), as amended
X Wyoming Solid Waste Rules and Regulations (WSWRR), Wyoming Solid Waste Guidelines, as amended
___ Wyoming Hazardous Waste Permit Dated _____, as modified and/or amended
___ Wyoming Solid Waste Permit Dated _____, as modified and/or amended

Date	Inspector	Time IN	Time OUT	RCRA: Gen. ( ) Transp. ( ) TSD ( )	EPA I.D. #	SW File #
2/10/11 TM	Timothy Moe	4:15PM TM	4:50 PM			10.526

Fac. Func.	Insp. Type		SW: Municipal (X) Industrial ( ) Other _____	Facility Name:
Municipal SW Landfill	Compliant Site Visit	___ Announced X Unannounced		Sheridan Landfill (Expansion)

Facility Representative(s):	Title:	Street Address:
Tony Baumgartner	Landfill Operator	83 East Ridge Road

Phone # (307) 674-8461	Fax # ( )	City:	State	Zip
		SHER	WY	82801

Reason for Inspection: Entry by Consent ( ) _____

X To determine the extent of compliance with the above referenced requirements, which may require the collection of samples, documents, and/or photographs
___ Follow-up inspection to confirm return to compliance
___ Other (Specify) _____
X Complaint (Briefly describe) ODOR Problems Complaint received today 02/10/11

___ Samples, Documents, and/or Photos collected (describe below)

1. Collected photos of compost/POTW Sludge Processing Area.
2. Collected Photos of Dead Animal Pit.
3.
4.

Samples requested and received by facility: ( ) Yes ( ) No
If yes: ( ) Duplicate ( ) Split X Photos (To be received when processed)

This inspection has revealed the following solid or hazardous waste management problems for this facility:

Observed Odor during investigation of compost/POTW Sludge Processing Area. Landfill Operator, Informed Dept Rep that POTW sludge waste (screened sludge) is processed (mixed) in with compost waste on a daily basis.
Observed no odor from Dead Animal Disposal Area.

Other comments or observations:

No Problems or Violations noted during Site visit.

The results of this inspection will be reviewed by personnel in the DEQ Solid and Hazardous Waste Division. A final determination of your facility's compliance with applicable regulations will be made following this review. Any supporting documentation requested must be received within 30 days to be considered during this review.

Receipt of this Notice of Inspection is acknowledged. Signature does not constitute agreement with findings.

Tony Baumgartner
(Signature of facility representative)

Signature of Lead Inspector
Timothy Moe

Assisting Inspector(s)

SOLID AND HAZARDOUS WASTE DIVISION

NOTICE OF INSPECTION

Revised 11/97

___ Resource Conservation and Recovery Act (RCRA), Wyoming Hazardous Waste Rules and Regulations (WHWRR), as amended
X Wyoming Solid Waste Rules and Regulations (WSWRR), Wyoming Solid Waste Guidelines, as amended
___ Wyoming Hazardous Waste Permit Dated _____, as modified and/or amended
___ Wyoming Solid Waste Permit Dated _____, as modified and/or amended

Date	Inspector	Time IN	Time OUT	RCRA: Gen. ( ) Transp. ( ) TSD ( )	EPA I.D. #	SW File #
2/9/11	Timothy Moe	2:10 - PM	3:30 PM			10.526

Fac. Func.	Insp. Type		SW: Municipal (X) Industrial ( ) Other _____	Facility Name:
Municipal SW Landfill	Complaint Site Visit	___ Announced ___ Unannounced		SHERIDAN LANDFILL EXPANSION

Facility Representative(s):	Title:	Street Address:
TONY BAUMGARTNER	LANDFILL OPERATOR	83 EAST RIDGE ROAD

Phone #	Fax #	City:	State	Zip
(307) 674-8461	( )	SHERIDAN	WY	82801

Reason for Inspection: Entry by Consent ( ) _____

___ To determine the extent of compliance with the above referenced requirements, which may require the collection of samples, documents, and/or photographs
___ Follow-up inspection to confirm return to compliance
___ Other (Specify) _____
X Complaint (Briefly describe) Complaint received 02/07/11 Regarding Litter; dust/odor; torn fence/gate located on east perimeter of facility; and failure to implement diversion structures for SW runoff onto adjacent landowner's property.
X Samples, Documents, and/or Photos collected (describe below)

1. Collected photos of fence/gate on east perimeter of property; gate was found to be
2. in poor condition.
3.
4.

Samples requested and received by facility: ( ) Yes ( ) No
If yes: ( ) Duplicate ( ) Split (X) Photos (To be received when processed)

This inspection has revealed the following solid or hazardous waste management problems for this facility:

Inspected gate/fence on east side of property; Photos were collected of gate/fence that appeared to have been unhooked from post. Facility and DEQ representative freed fence from snow and pulled gate shut to closed and secured gate to post observed during site visit. A hole in this portion of the fence (i.e. the gate) was also observed.

Other comments or observations: The facility's quarterly internal inspection logbook indicates fence was in good condition on 12/01/10.

The Department is recommending at this time to the landfill to replace this gate or portion of fence ~~with a permanent fence closure~~ with a permanent fence closure (i.e remove gate and replace w/ fence). This issue is noted as a problem.

The results of this inspection will be reviewed by personnel in the DEQ Solid and Hazardous Waste Division. A final determination of your facility's compliance with applicable regulations will be made following this review. Any supporting documentation requested must be received within 30 days to be considered during this review.

Receipt of this Notice of Inspection is acknowledged. Signature does not constitute agreement with findings.

Tony Baumgartner
(Signature of facility representative)

Signature of Lead Inspector
Timothy Moe

Assisting Inspector(s)

Department of Environmental Quality

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

Matthew H. Mead, Governor

152 N. Durbin St., Suite 100 · Casper, WY 82601 · (307) 473-3450

John Corra, Dir

May 23, 2011

Mr. Charles Martineau
Solid Waste Manager
City of Sheridan
P. O. Box 848
Sheridan, WY 82801

RE: Methane exceedances, Existing Sheridan landfill, SHWD File # 10.526

Dear Mr. Martineau:

As you know, the City has installed an active gas extraction system at the existing landfill to address methane exceedances at the facility boundary, and also to address a groundwater issue related to landfill gas in the same area. As has been previously discussed, that system started operation in approximately March 2009; the Department had previously understood the system started operation a few months before that time. In correspondence dated December 22, 2009 the Department agreed to allow an additional six months (until approximately June 2010) for adjustment and calibration of the system in order to allow it to reach equilibrium to allow for further evaluation of the effectiveness of the system.

The Department has completed its review of the City's most recent submittal of methane data results dated March 10, 2011 which indicate elevated methane concentrations (100% of the lower explosive limit (LEL)) at well G-7. While the City's methane data results have shown methane concentrations at the other methane wells below the compliance level of 25% LEL, well G-7 has exceeded the 25% LEL in the most recent quarterly monitoring event and two other monitoring events since June 2010.

As you are aware, Solid Waste (SW) Chapter 2, Section 5 (t)(i) state that facilities shall be operated such that the concentration of methane gas in facility structures and at the facility boundary does not exceed 25% of LEL for methane. The facility did implement a remediation plan per SW Chapter 2, Section 5 (t)(i)(C), to mitigate the elevated methane with an active gas extraction system. However, according to the methane gas results submitted by the City, the gas extraction system does not appear to be successful in adequately reducing methane levels in the vicinity of G-7.

Therefore, the City will need to provide the Department with a proposal for additional work to remediate the methane gas to less than 25% of the LEL at the facility boundary in the vicinity of methane well G-7. **Please provide a methane gas remediation proposal for the Existing Sheridan Landfill within 60 days of receiving this letter.**

Cheyenne
122 West 25th Street 82002

Lander
510 Meadowview Drive 82520

Sheridan
2100 W. 5th Street 82801

If you have any questions regarding this matter, please contact me at (307) 473-3462.

Sincerely,

Carol Stark

Carol Stark, CHMM
Natural Resources Analyst
Solid and Hazardous Waste Division

Cc: Dale Anderson ☞ Casper SHWD File # 10.526
Tim Moe ☞ Sheridan SHWD File # 10.526
Cheyenne SHWD File # 10.526

PETITIONERS 17

THE STATE OF WYOMING

JIM GERINGER
GOVERNOR

Department of Environmental Quality

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

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

Wyoming Department of Environmental Quality
Solid & Hazardous Waste Division

VARIANCE APPLICATION FINDINGS

Applicant :	Town of Thermopolis
Facility :	Thermopolis SAN#1 Landfill Expansion (SHWD File #10.625)
Variance Request :	SWM Chapter 2, Section 3(a)(iii) "Distance to residences and other buildings" (statutory location standard) SWM Chapter 2, Section 3(a)(iii) "Distance to drinking water sources" (statutory location standard)
Chronology :	March 27, 1995 - 1st variance application submitted June 5, 1995 - 1st variance application reviewed by SHWD August 9, 1995 - 2nd variance application submitted October 3, 1995 - 2nd variance application reviewed by SHWD October 3, 1995 - SHWD recommendations forwarded to EQC April 12, 1996 - Variance Hearing by SHWD

Purpose

The purpose of this document is to present the findings of the Department of Environmental Quality (WDEQ), Solid & Hazardous Waste Division (SHWD) regarding a variance application submitted by the Town of Thermopolis. The variance application addresses two statutory location standards which apply to the proposed expansion of the Thermopolis landfill.

Background

The Town of Thermopolis has applied to renew its existing solid waste landfill permit. The current landfill will be closing in the near future because the BLM cannot renew the current lease for landfilling purposes. The BLM is also unable to sell the current lease area to the Town of Thermopolis. Therefore, in order to provide for additional landfill capacity, the application contains a major amendment to expand the existing facility boundaries. If approved, the proposed lateral expansion will add approximately 52.5 acres to the current permit area (65 acres) and will

provide 30 to 40 years of additional site capacity. As required by SWM Chapter 2 regulations, lateral expansions must comply with Section 3 "Location Standards".

Currently there are 79 occupied dwellings located within one (1) mile of the proposed lateral expansion area. The proposed lateral expansion, therefore, does not comply with the following location standard:

> *SWM Chapter 2, Section 3(a)(iii) - "Distance to residences and other buildings: Except upon a variance granted by the Environmental Quality Council in accord with W.S. 35-11-502(c), no facility greater than one (1) acre in size shall be located between 1,000 feet and one (1) mile of a public school except with the written consent of the school district board of trustees, or between 1,000 feet and one (1) mile of an occupied dwelling house except with the written consent of the owner. Additionally, facilities of any size shall not be located within 1,000 feet of any occupied dwelling house, school or hospital, and shall not be located within 300 feet of any building unless provisions have been made for protection from methane gas accumulation."*

There is also one (1) domestic/stock well (U.W. Permit No. 43693) approximately 2600 feet north of the proposed lateral expansion area. The proposed lateral expansion, therefore, does not comply with the following location standard:

> *SWM Chapter 2, Section 3(a)(v) - Distance to drinking water sources: Except upon a variance granted by the Environmental Quality Council in accord with W.S. 35-11-502(c), no facility greater than one (1) acre in size shall be located between 1,000 feet and one-half (1/2) mile of a water well permitted or certificated for domestic or stock watering purposes except with written consent of the owner of the permit or certificate. Additionally, facilities of any size shall not be located within 1,000 feet of any drinking water source such as a well or surface water intake.*

SWM Chapter 1, Section 2(i) specifies the variance application procedure for standards specified in W.S. 35-11-502(c). The Town of Thermopolis submitted a request for a variances from these location standards. This request was reviewed by the WDEQ/SHWD. The WDEQ/SHWD forwarded its recommendations to the Environmental Quality Council (EQC). The EQC was asked to schedule a public hearing on the variance request and render a final decision. In the 1996 Wyoming Legislative Session, the procedure for obtaining a variance from the location standards of W.S. 35-11-502(c) was changed to place responsibility for granting the variance with the director of the WDEQ instead of the EQC. Therefore, on April 12, 1996, the WDEQ/SHWD held a public hearing on the proposed variance application. This hearing was held in accordance with the procedures specified in Chapter III of the WDEQ Rules of Practice and Procedure.

Variance Application Requirements

SWM Chapter 1, Section 2(i)(i) specifies the information which is required to support an variance application. Each of these requirements is listed below in *italics* and followed by:

Application Summary: The department's summary of the information provided by the applicant

Hearing Summary: The department's summary of the comments received during the public hearing

Department Evaluation: The department's final evaluation of the issue based on the information provided by the applicant and the comments received during the public hearing

Section 2 (I)(I)(A) - For proposed facilities which do not meet the location standard for proximity to towns, schools or any occupied dwelling housed in W.S. 35-11-502(c)(i) or (ii), the applicant shall:

(I) Present an analysis of additional traffic which would result from the proposed facility, and demonstrate that additional traffic caused by operation of a disposal facility will not pose a safety threat to the public;

Application Summary: The existing landfill serves approximately 4,000 people within Hot Springs County. The population of East Thermopolis, Kirby and Thermopolis have decreased by approximately 21% from 1980-1990. Given the fact that these three municipalities represent 73% of the county population, no net increase in vehicle traffic is anticipated. Access to the proposed lateral expansion area will be gained using the same existing county road (Sunnyside Lane) that provides access to the current landfill.

Hearing Summary: No statements at the hearing indicated that the proposed lateral expansion would increase current traffic levels. However, residents who live along the current access road indicated that the current level of traffic along this road is deteriorating the road bed and creating a great deal of dust. Despite the fact that the levels of traffic were not expected to increase, the residents were clearly concerned about the existing problems and the continuation of these problems for an additional 30 or 40 years.

Department Evaluation: The department has found no evidence which would suggest that the proposed lateral expansion will result in increased levels of traffic along the current access road. Deterioration of the road bed can create hazardous driving conditions.

If the current landfill did not have to close, it could be utilized for approximately 13 more years. The proposed lateral expansion will have an estimated site life of 30 to 40 years. Obviously, the proposed lateral expansion will result in a net increase in the amount of time in which the current landfill access road will be utilized.

In order to properly evaluate the issues raised at the public hearing, the department wrote a letter to the Town of Thermopolis on May 10, 1996. The purpose of this letter was to request all available information regarding the Town's evaluation of the feasibility and cost of available options which would address the local residents' concerns regarding the current access road.

In response to the department's May 10, 1996 letter, the Town of Thermopolis clarified its efforts to define an alternative access route. Given the topographic and geologic conditions of the area, only two potential alternatives to the current access route were identified. The first alternative route would be from Highway 120 (west of the landfill) along the Owl Creek drainage. This route was not considered to be a feasible alternative due to the fact

that it would require the construction of a new road without providing any savings in transportation costs (i.e., the length of this alternative route is similar to the length of the current route). The second alternative route would be from Highway 20 (east of the landfill) across private lands owned by Fred and Annalise Domhoff and Clarke Jackman. A comparison of the cost of using the existing route with the cost of building and maintaining the second alternative route indicates that the existing route is more cost-effective. The cost of the second alternative route, however, is moot because the two private landowners involved do not appear to be willing to negotiate an easement or a right-of-way.

In regards to the condition of the current access road, the Town of Thermopolis indicated that this road is classified as a "high priority road" by Hot Springs County, the entity responsible for the maintenance of this road. Under this classification, this road receives a higher level of maintenance than other county roads serving a comparable number of residents. Hot Springs County is reported to be in the process of repairing the soft spots in the road and expects to have these repairs completed by July 1, 1996. The County is also reported to be planning installation of culverts to improve drainage, placement of an asphalt overlay over the entire length of the road, and widening several corners to improve safety and driveability.

The department finds that the Town of Thermopolis has made a reasonable effort to identify an alternative access route. The only alternative which is available would not reduce the travel distance and would require a significant capital investment. As for the safety issues associated with the existing access route, the department finds that reasonable efforts are being made to maintain and improve the quality and safety of the road. In consideration of these efforts and the high cost of developing an alternative route, the department finds that the continued use of the existing access road does not pose an unreasonable safety hazard.

(II) *Demonstrate that the operation of the proposed facility will not present odor, dust, litter, insect, noise, health (human and animal) or aesthetic problems, and will not present a public nuisance by its proximity to the town, schools and/or dwellings. This demonstration may be made through analysis of the facility design and operation practices;*

Application Summary: In order to minimize littering or unauthorized dumping along the access road to the landfill, the Town of Thermopolis will be working with the Hot Springs Sheriff to actively enforce littering ordinances and to require all loads be adequately covered. To prevent dumping of wastes at the landfill entrance when the site is closed, the Town of Thermopolis has placed separate dumpsters for the local residents use. Means of controlling litter on-site include placement of portable litter catch screens on the downwind side of the trench with litter collection activities being performed on-site daily and off-site monthly. Odor, dust, and health problems will be addressed by proper management of wastes, routine hazardous waste screening activities, and placement of six inches of clay-loam over all wastes at the end of each working day. The geography of the area is such that the expansion area is not visible to local residents and therefore does not pose any aesthetic problems.

Hearing Summary: Residents of along the current access road indicated that the although the Town of Thermopolis had published notice on the littering ordinances and issued warning letters, litter and illegal dumping along the access road continues to be a problem.

Residents also indicated that the waste receptacles placed at the landfill gates were inadequate to contain the volume of waste brought to the landfill on days when the landfill was closed.

One person indicated that the dust from the access road was affecting his health. This person lives near the entrance to the landfill. He indicated that mud is tracked out of the landfill on rainy days and drops off on the access road. This mud eventually dries and generates dust as landfill traffic drives over it.

On behalf of the Town of Thermopolis, Mr. Overfeld stated that a "two track" road to the landfill had been considered as an alternative, shorter route. However, the alternative route crossed private land and would require development to be an all-weather landfill access.

Department Evaluation: Other than a single comment suggesting that dust from the access road was causing a health problem, the department has no evidence which indicates that the road dust is more than a nuisance problem. The Town of Thermopolis has made an effort to address the dust and litter problems along the access road and at the landfill gate. Based on the comments received from the public, it appears that the Town's efforts have improved the situation but have not solved the problems.

In order to properly evaluate the issues raised at the public hearing, the department wrote a letter to the Town of Thermopolis on May 10, 1996. The purpose of this letter was to request all available information regarding the Town's evaluation of the feasibility and cost of available options which would address the local residents' concerns on this matter.

In response to the department's May 10, 1996 letter, the Town of Thermopolis clarified its efforts to address the dust and litter problems. As noted previously, problems along the access road cannot be easily resolved by developing an alternative access route.

The Town of Thermopolis indicated that because the access road is outside of the Town's boundaries, the Town's covered load ordinance cannot be enforced. The Town, however, is considering discussions with the Hot Springs County Commission about implementing a county covered load ordinance. Additionally, the Town has implemented a program at the landfill whereby individuals are given a warning the first time they deliver an uncovered load. These individuals are told that they will not be allowed to dump in the future if they arrive at the landfill with uncovered loads. After implementing this program, no one has arrived with an uncovered load a second time. The Town of Thermopolis has also placed dumpsters at the landfill gate to minimize illegal dumping when individuals try to use the landfill when it is closed.

In order to address litter and dumping along the access road, the trash truck drivers are currently monitoring the road on a daily basis and insuring that the most obvious problems are corrected. The Town has also evaluated two additional programs for controlling litter and dumping along the access road. The first option would utilize a crew to pick up litter along the entire access road on a monthly basis. The annual cost of this option is estimated at $6,000 and may require hiring another person. The second option would utilize a crew to pick up litter along the entire access road on a quarterly basis. The annual cost of this option is estimated at $3,000. The Town has suggested that a quarterly litter collection

program can be done within their current budget and by existing personnel.

The department finds that the Towns' proposal to monitor and resolve major litter problems along the access road on a daily basis and implement a quarterly litter collection program along the entire length of the access road is reasonable to begin addressing the local residents concerns regarding litter and illegal dumping. However, if litter and illegal dumping along the access road continues to be a problem, the department may need to impose additional requirements on the Town. In order to insure that the current proposal is implemented, the department will condition its approval of this variance application on implementation of the Town's proposal.

The dust problems reported near the facility entrance are difficult to analyze and resolve. Given the types of soils at this site, it is easy to see how this material could create a dust problem as it dries and it driven over. The department believes, therefore, that it is prudent to condition its approval of this variance application on a requirement to make reasonable efforts to minimize and control dust problems in the area. The department will need to monitor the dust situation and the Town's effort in order to determine if additional measures are necessary.

With the imposition of the conditions discussed above, the department finds that the litter, illegal dumping and dust problems posed by the proposed facility can be adequately controlled.

(III) *Provide design features and monitoring specifications used to preclude methane migration from affecting any buildings within one (1) mile of the proposed facility, if the facility is used for the disposal of wastes which may form methane as a decomposition product.*

Application Summary: The potential for methane migration from the proposed expansion area to impact buildings within one mile of the landfill is low. Site soils are comprised of sandy clays and clay. These materials are relatively impermeable and do not provide significant pathways for methane migration. Daily operations include visual screening of wastes, adequate compaction of wastes prior to covering, daily placement of cover over wastes, and prohibition of bulk liquids. These activities all minimize the potential for methane to be generated at the landfill. Additionally, all on-site structures will be monitored for methane on a quarterly basis. If methane concentrations greater than 25% of the LEL are detected, appropriate remedies of these impacts will be performed. Currently, no off-site structures are located within a 1000 foot radius of the landfill. The applicant has confirmed that if during the active life of the landfill, any structures are sited within a 1000 foot radius of the property boundary, the applicant will verify that the landfill poses no potential methane impacts to the newly sited structure. Finally, prior to completing the 30 year post-closure period, the applicant will demonstrate that methane concentrations do not exceed 25% of the LEL at the facility boundary.

Hearing Summary: This issue was not raised as a concern.

Department Evaluation: SHWD has established a policy which states that if there are no structures on-site or within 1,000 feet of the permit boundary, it is not necessary to install an active methane monitoring system. This policy is based on department experience which suggests that methane is not likely to migrate more than 1,000 feet at dangerous

concentrations. The Town of Thermopolis has committed to monitoring on-site structures for methane and notifying the department and initiating an active methane monitoring system should future development (on-site or off-site) occur. The department concludes, therefore, that the Town of Thermopolis has adequately addressed this standard.

Section 2(I)(I)(C) - For proposed facilities, excluding incinerators, which do not meet the location standard for proximity to water wells in W.S. 35-11-502(c)(iv), the applicant shall provide:

(I) A detailed description of the site's geologic and hydrologic characteristics, supported by data from on-site soil borings and groundwater monitoring wells;

Application Summary: The proposed expansion area is set in the Thermopolis Shale and was previously operated by Wyo-Ben as a bentonite mine. In order to investigate site conditions three borings were drilled to depths between 27.5 and 50 feet below ground surface and into the underlying bedrock. One monitoring well is north of the existing landfill, one well is to the west of the existing landfill and the third well is to the east of the proposed expansion area. To date, ground water has not been found in any of the three wells. A description of the subsoils found sandy lean clays, claystone and sandstone bedrock. Specifically, each of the three borings contained 24 to 37 feet of claystone bedrock. The claystone is described as weathered to very hard, tan to black, gypsiferous, iron staining, with bentonitic lenses. Samples from the proposed expansion area trench were collected and permeability tests run. Permeabilities ranging between 4.7 x 10^{-7} and 8.4 x 10^{-7} cm/sec were measured in these samples. These extremely low permeabilities indicate the trench material is relatively impermeable. Geologic strata steeply dip 14-18° to the north-northeast.

Hearing Summary: None of the public hearing participants raised concerns regarding the Town's efforts to characterize the geology and hydrology of the site.

Department Evaluation: Based on a review of the information provided by the Town of Thermopolis, the department is satisfied that the applicant has adequately defined the geology and hydrology of this area. The department concludes, therefore, that the Town of Thermopolis has adequately addressed this standard.

(II) A detailed description of the proposed facility's containment system (cap and liner systems) and surface water diversion structures;

Application Summary: The proposed lateral expansion area is located in a former bentonite mine site. The trench will have an existing natural bentonitic liner at least 30-50 feet thick. The soils in the proposed expansion area were found to exhibit permeabilities between 4.7 x 10^{-7} and 8.4 x 10^{-7} cm/sec. A total of two feet of final cover will be placed in 12" lifts. Each of these lifts will be compacted to 90% of maximum dry density which will provide a permeability of between 4 x 10^{-7} and 8 x 10^{-7} cm/sec.

Ditches and berms will be constructed in order to divert run-on/run-off around the fill area and to minimize erosional problems. Surface water diversion ditches have been designed to manage the 100-year, 24-hour precipitation event.

Hearing Summary: On behalf of the Town of Thermopolis, Mr. Overfeld stated that the

town will propose in its expansion permit application that the expansion landfill would be lined and capped with clay. No details on the liner thickness, permeability, or construction procedures were presented.

None of the public hearing participants raised concerns regarding the design of the containment system or the surface water diversion system for the proposed lateral expansion area. One person indicated that he has had previous problems with run-off from the existing site.

Department Evaluation: In consideration of the low-permeability soils which will be present below and above the wastes, the apparent lack of ground water and a review of the facility operating procedures, the department has determined that the proposed lateral expansion does not warrant the construction of an engineered containment system, although a recompacted clay liner maybe necessary. In addition, the proposed surface water diversion structures meet the minimum design criteria. The department concludes, therefore, that the Town of Thermopolis has adequately addressed this standard.

(III) *A detailed description of the groundwater monitoring program (including location of wells, sampling frequency and sampling parameters) which would be instituted when the facility begins operations;*

Application Summary: It is estimated that ground water would be at least 150 feet below the surface of the landfill. The proposed expansion area is located in extremely impermeable materials making downward migration of any leachate very difficult. Ground water was not found to be present in any of the three wells (27.5 and 50 feet in depth) that were installed during the geotechnical investigation.

Hearing Summary: Residents who live in the subdivision to the north of the proposed expansion area pointed out that all of the monitoring wells were on the south side of the existing landfill and proposed lateral expansion and were too shallow to detect potential landfill impacts to ground water. One commenter suggested that at least one well should be drilled until ground water was encountered .

Department Evaluation: Based on a review of the information provided by the Town of Thermopolis, the department is satisfied that the applicant has installed an adequate monitoring system. Given the local climatic conditions and the low permeability soils at this site, the department believes that the potential for leachate generation is extremely low. Even if leachate were generated from the base of the landfill cells it would have to travel a considerable distance through unsaturated, highly impermeable materials before it could migrate beyond the boundaries of the facility. In consideration of these issues, the installation of a down-gradient leachate monitoring point is considered unnecessary.

Based on a review of the technical issues, the department concludes that the Town of Thermopolis has adequately addressed this standard. However, the local residents are clearly uncomfortable relying on the department's technical analysis of this issue to assure them that this site will not impact their ground water. Therefore, in order to address these concerns and provide an additional level of protection, the department will condition its approval of this variance request on the installation of one (1) additional monitoring well down-gradient of the proposed lateral expansion area.

(IV) *An analysis of the potential for contaminants which may leak from the disposal facility to adversely affect the nearby water well(s). This analysis may be in the form of contaminant transport modeling results, an evaluation of hydrologic conditions or aquifer properties or other applicable information.*

Application Summary: There is only one well located within one-half mile of the proposed expansion area. This well (permit no. 43693) is used by Morris and Barbara Yetter for domestic/stock purposes. The well is located approximately 2600 feet north of the expansion area. It is constructed to a depth of 220 feet and has a static water level of 145 feet below ground surface. Given the regional formation dips in the area, this well is completed in a zone several hundred feet stratigraphically above the Thermopolis Shale, the formation in which the expansion area is located.

The Town of Thermopolis hired a geotechnical consulting firm to evaluate the potential for the landfill to impact the Yetter's well. The consultant concluded that the potential for the landfill to impact this well is very small. This determination was based on several factors. The geologic stratum in which the well is located is separated from the geologic strata in which the proposed expansion area is located by several hundred feet of low-permeability Mowry Shale. The proposed expansion area is also sited in a "nearly impermeable stratum, the Thermopolis Shale" which was formerly mined for bentonite. As stated in the consultant's letter "The bentonite in the Thermopolis Shale should provide a very effective seal to prevent seepage of any leachate out of the landfill."

A second domestic well, owned by Jason Pederson, is located approximately 3500 feet northwest of the proposed expansion area and approximately 1000 feet northwest of the existing landfill. This well was drilled to a depth of 45 feet and is completed in the Owl Creek alluvium. In a correspondence to SHWD, Mr. Pederson alleges that current landfill operations have impacted his well.

Even though the Pederson well is outside the one-half mile radius of the expansion area (and does not as part of the variance application have to be addressed), the applicant has elected to address this issue. The dip of the strata in the area is generally to the northeast. In most cases, ground water flows along dip. The Pederson well, however, is located northwest of the landfill and perpendicular to the inferred direction of ground water flow. Therefore, if any fluids were to migrate from the landfill, it is highly unlikely that they would migrate toward in the direction of the Pederson well. If the Pederson well was being impacted by leachate from the landfill, one would expect impacted ground water to also be present at the landfill. In fact, during the geotechnical investigation, no ground water was found at the site. Finally, because the Pederson well and expansion area are located on opposite sides of a divide, any surface water runoff from the landfill would run away from the Pederson well. For these reasons, it is highly unlikely that the existing landfill or proposed expansion area would impact the Pederson well.

The proposed setting of the expansion area is a former bentonite mine. It is estimated the bentonite seam in the area is at least 30 to 50 feet thick. As described in the renewal application, the Thermopolis formation is a siliceous shale with interbedded bentonite and may be up to 700 feet thick in the area. Laboratory analyses of the subsoils in the area measured falling head permeabilities between 4.7×10^{-7} and 8.4×10^{-7} cm/sec, indicating

that these materials are relatively impermeable. Current SHWD engineered containment standards require 24 inches of 1 x 10^{-7} cm/sec for constructed engineered clay liners. The proposed natural setting essentially provides a comparable setting.

Hearing Summary: The one well within one-half mile of the proposed expansion is owned by Morris and Barbara Yetter. Their nephew, Bill Yetter, stated that contamination of the well would be a financial loss and a determent to their lifestyle. Mr. Yetter stated that the city had offered a written agreement to replace the well if it were to become contaminated but that because of conditions in the agreement the Yetters would not sign. These conditions included the statement that the city would replace their water only if it were contaminated through negligent operation of the landfill. The Yetter's also did not feel they should be burdened with the financial burden of proving or documenting that any contamination of the well in the future was caused by the operation of the landfill.

Mr. Jason Pederson stated that the quality of his well water had declined in the past to the point that he had to haul water for his grandson to shower in. He also stated that the quantity of water produced by the well had decreased from 15 gallons per minute to 6 gallons per minute. He believes that the landfill is responsible. Mr. Pederson's well is outside the one-half mile location standard for the proposed landfill expansion.

One commenter raised concerns about potential impacts to the hot springs in the area.

Department Evaluation: In general, the department concurs with the applicant's assessment regarding the potential for this site to impact ground water in the area. The facility operating procedures, local climatic conditions and the low-permeability soils which will be present below and above the wastes are ideal for minimizing the generation and migration of leachate. Even if leachate were generated, it would have to travel a considerable distance through unsaturated, highly impermeable materials before it could migrate to the boundaries of the facility. Migration of leachate beyond the facility boundaries and impacts to off-site ground water resources is even less likely to occur.

Based on the scientific information available, the department finds no technical basis for Mr. Pederson's assertion that the current problems with his well are due to the historical operation of the existing facility. The department also finds that operation of the proposed expansion area poses no obvious threat to the Yetter's well or the hot springs in the area. In the highly unlikely event that the proposed lateral expansion generated sufficient quantities of leachate to allow migration beyond the facility boundaries, Wyoming Statutes and department rules and regulations contain adequate provisions to require the responsible party to assess the nature and extent of contamination and to implement an appropriate corrective measure. It should also be noted that another section of this review recommends imposition of a condition which requires the installation of an additional monitoring point, down-dip of the proposed expansion area. The department concludes, therefore, that the Town of Thermopolis has adequately addressed this standard.

Section 2 (i)(i)(D): In addition to other information requested in this subsection, all variance applications made under this subsection shall be accompanied by the following information:

(I) The proposed size of the facility

Application Summary: The total site encompasses approximately 128 acres. Individually, the current fill area is approximately 65 acres in size and the proposed expansion area will be 52.5 acres.

Hearing Summary: This information was not contested.

Department Evaluation: The department concludes that the Town of Thermopolis has adequately addressed this standard.

(II) The name, address and telephone number of the applicant

Application Summary: The applicant is:

Town of Thermopolis
Mayor Mike Mortimore
P.O. Box 603
Thermopolis, WY 82443
(307) 864-9285

Hearing Summary: This information was not contested.

Department Evaluation: The department concludes that the Town of Thermopolis has adequately addressed this standard.

(III) The legal description of the property.

Application Summary:

Existing site: T.43N., R.95W., Hot Springs County, Wyoming
Section 13: $NW^1/_4$-$NW^1/_4$-$SW^1/_4$ and $SW^1/_4$-$SW^1/_4$-$NW^1/_4$
Section 14: $W^1/_2$-$SE^1/_4$-$NE^1/_4$ and $SE^1/_4$-$SE^1/_4$-$NE^1/_4$ and $S^1/_2$-$NE^1/_4$-$SE^1/_4$-$NE^1/_4$ AND $NE^1/_4$-$NE^1/_4$-$SE^1/_4$

Expansion: T.43N., R.95W., Hot Springs County, Wyoming
Section 13: $S^1/_2$-$SE^1/_4$-$SW^1/_4$-$NW^1/_4$ and $NE^1/_4$-$NW^1/_4$-$SW^1/_4$ and $N^1/_2$-$SE^1/_4$ $NW^1/_4$-$SW^1/_4$ and $SW^1/_4$-$SW^1/_4$-$SE^1/_4$-$NW^1/_4$ and $NE^1/_4$-$SW^1/_4$

Hearing Summary: This information was not contested.

Department Evaluation: The department concludes that the Town of Thermopolis has adequately addressed this standard.

(IV) A detailed description of the facility which includes information on the amount, rate (tons per day), type (including chemical analyses if other than household refuse) and source of incoming wastes, a narrative describing the facility operating procedures, and the estimated site capacity and site life.

Application Summary: The Thermopolis landfill is operated as a Type II sanitary landfill. Presently, approximately 20,000 cubic yards of waste are disposed at this site each year. Typical wastes include household wastes, non-hazardous dried wastewater treatment plant sludge (61 tons/year), scrap tires, dead animals, and construction/demolition wastes. No special wastes (e.g., petroleum contaminated soils, friable asbestos) will be accepted for disposal. The service area for the landfill is identified as Hot Springs County with a majority of the wastes being generated within a 20 mile radius of the landfill. The proposed expansion area will have a disposal capacity of 635,000 cubic yards and an estimated life of 30 to 40 years. Wastes will be placed in the active trench daily with all wastes being covered with at least six inches of cover at the end of each operating day. Surface water controls will be constructed to divert run-on/run-off around the active trench and to prevent run-on from contacting wastes.

Hearing Summary: This information was not contested.

Department Evaluation: The department concludes that the Town of Thermopolis has adequately addressed this standard.

(V) The names and addresses of the property owners of all lands within one mile of the proposed facility.

Application Summary: A listing of all property owners within one mile of the proposed facility was provided.

Hearing Summary: This information was not contested.

Department Evaluation: The department concludes that the Town of Thermopolis has adequately addressed this standard.

(VI) A USGS topographic map (scale of 1:24,000 or 1:62,500) which shows the boundaries of the proposed site, and;

Application Summary: A copy of a USGS topo map with the boundaries of the proposed expansion area was provided.

Hearing Summary: This information was not contested.

Department Evaluation: The department concludes that the Town of Thermopolis has adequately addressed this standard.

(VII) Information sufficient to evaluate the conditions specified in paragraph (i)(ii) of this section.

Section (ii) In granting a variance as provided by this paragraph, the council shall issue written findings that the variance will not injure or threaten to injure the public health, safety, or welfare. The council shall only make such a finding if the evidence presented in the application and the public hearing demonstrates that:

(A) There are no available alternative locations which meet the location standards for a solid waste management disposal facility to meet the disposal needs of the applicant, within a reasonable distance of the boundary of the service area of the facility; and

Application Summary: Prior to submitting the request to expand the boundaries of the existing facility, other potential sites were investigated. However, none of these sites met all of the SHWD requirements. Types of problems encountered included conflicts with other agency (BLM) land use policies, unsuitable geology, and high costs of purchasing private lands. Another factor considered was proximity to Town. The applicant believes that any "new" site would likely be further away from town and this distance would most likely result in an increased level of illegal dumping activities.

Hearing Summary: Alternative locations were mentioned by several of the hearing participants. Reasons for recommending other locations included lower average precipitation (e.g., Kirby) and less densely populated sites.

On behalf of the Town of Thermopolis, Mr. Overfeld stated that alternative sites had been considered but were not suitable for reasons that included mineral leases in existence, location standards, and cost. No cost analysis was presented.

Department Evaluation: Based on the statements provided in the Town's original application, the department's initial evaluation of this standard concluded that the Town had made a reasonable effort to identify and evaluate alternative locations for a new landfill. During the public hearing, however, it became obvious that some of the local residents questioned the extent of the Town's efforts in this matter.

In order to properly evaluate the issues raised at the public hearing, the department wrote a letter to the Town of Thermopolis on May 10, 1996. The purpose of this letter was to request all available information regarding the Town's evaluation of the feasibility and cost of available options for an alternative landfill location.

In response to the department's May 10, 1996 letter, the Town of Thermopolis clarified its efforts to identify an alternative location for a new landfill. The primary criteria used to evaluate alternative sites included a six-mile radius from the center of town, and a three-mile radius centered on the intersection of Highway 20 and County Road No. 27. Using these primary criteria, the Town's consultant then evaluated several other criteria which would affect the technical suitability and financial feasibility of a new site. In summary, the areas which may be technically suitable for a landfill were either outside of the primary search area or contained mineral deposits which are likely covered by federal claims, patents or leases.

The department contacted Steve Till who works for the BLM on the Worland District Office to evaluate the impact of existing claims, patents or leases on the availability of federal land for landfilling purposes. Mr. Till confirmed the assumption that the areas which would be suitable for landfill development would probably have a mineral claim, patent or lease already in place, which would prevent a sale.

The department has concluded that the proposed expansion area is in an ideal geologic and hydrologic setting. In consideration of this conclusion and the fact that no new access road would be required to utilize this proposed, it is reasonable to assume that in order for an alternative landfill location to be economically feasible it would need to be closer to town. Based on the department's review of the information and analysis provided, the department is satisfied that the Town of Thermopolis has made a reasonable effort to identify alternative landfill locations and conclude that no alternative landfill locations are available.

(B) It is not possible for the applicant to use existing, permitted solid waste management disposal facilities owned by another person within a reasonable distance of the boundary of the service area of the facility.

Application Summary: There are no other permitted solid waste management disposal facilities within the permitted service area of the Thermopolis landfill. The nearest other permitted landfill to Thermopolis is the Washakie County SWDD sanitary landfill in Worland.

Hearing Summary: On behalf of the Town of Thermopolis, Mr. Overfeld stated that transporting solid waste to the Worland landfill was unacceptable and costly. He also stated that closing the Thermopolis landfill would result in an increase in illegal dumping. Mr. Overfeld did not provide an actual comparison of the cost of operating a landfill with the cost of transferring the waste to the Worland landfill.

Department Evaluation: Based on the statements provided in the Town's original application, the department's initial evaluation of this standard concluded that the Town had made a reasonable effort to evaluate the use of existing, permitted landfills in the area. During the public hearing, however, it became obvious that the Town had not fully evaluated the option of using the Worland landfill, which is the closest permitted landfill.

In order to properly evaluate the issues raised at the public hearing, the department wrote a letter to the Town of Thermopolis on May 10, 1996. The purpose of this letter was to request all available information regarding the Town's evaluation of the feasibility and cost of transferring wastes to the Worland landfill.

In response to the department's May 10, 1996 letter, the Town of Thermopolis clarified and expanded on their efforts to investigate the use of the Worland landfill. Further discussions with the Washakie County Solid Waste Disposal District No. 1 were inconclusive regarding the feasibility of this option. Additionally, the department's preliminary cost analysis of this option suggests that it would be more expensive than developing the proposed expansion area.

In conclusion, the department is satisfied that the town has made a reasonable effort to explore the use of existing facilities in the area and conclude that development of the

proposed expansion area is the most cost effective option for managing solid waste in this area.

(C) Special or unique conditions or circumstances apply to the applicant and justify granting the variance.

Application Summary: The Town of Thermopolis has been operating a landfill at the current location for over 20 years. The landfill is located on BLM lands. The BLM has notified the Town of Thermopolis that this lease to operate the landfill will not be renewed. As a result, even though significant space remains at the currently permitted site, the Town of Thermopolis is attempting to find additional suitable lands in order to provide disposal capacity for the residents of Hot Springs County. The Town of Thermopolis believes that the most appropriate solution to this problem is to purchase additional adjacent lands from the BLM and permit a lateral expansion to the existing landfill.

In order to satisfy the location standards the Town of Thermopolis has attempted to inform the affected landowners of their plans and to obtain their written consent to proceed. The Town of Thermopolis began by holding a public meeting. This meeting was advertised in the local newspaper and by sending written invitations to a preliminary list of landowners within one mile of the proposed expansion area. The five residents who attended this meeting raised concerns regarding litter, illegal disposal of wastes outside of the landfill, smoke and odors, and impacts to wildlife and livestock. Subsequently, a second mailing to a more comprehensive list of residents within a one mile radius of the site was compiled. Using this list, information regarding geology, groundwater, and general operations of the proposed expansion area was disseminated. Included with this mailing was a form for individuals to sign which indicated their approval of the proposed expansion. To date, 18 of 79 residents have responded and given their approval. The Town has also met individually with the Yetters, the owners of the only well within one-half mile of the proposed expansion area, but have been unable to address their concerns.

The Town of Thermopolis believes that it has made diligent and good faith efforts to obtain approval for the expansion from residents located within one mile of the proposed expansion area and to address their concerns in the renewal application.

Hearing Summary: Area residents who spoke at the hearing made it clear that there are several objections and more than one person who objected to the proposed lateral expansion. The Yetters also filed a written objection prior to the April 12, 1996 hearing based on their concerns that the landfill expansion could contaminate their well. Two residents of the Sunnyside Lane Subdivision voiced objections concerning the illegal dumping, roadside litter, and uncovered loads on the road through the subdivision to the landfill. Both speakers said improvements in these areas had been evident but felt that the town, landfill operator, and the county sheriff's department needed to take a firmer policy about enforcement on these issues.

Department Evaluation: The Town of Thermopolis has made an effort to address the local residents's concerns regarding the proposed lateral expansion of the landfill. Unfortunately, the Town's efforts have not been adequate to obtain the consent of all landowners within a mile or the single well owner within one-half mile.

Variance Application Conclusions

The issues raised by this variance application include potential impacts to ground water resources in the area and dust, litter and nuisance problems along the facility access road.

In order to address the local residents' concerns regarding the litter problems along the facility access road, the department finds that additional control measures are necessary and is conditioning its approval of this variance request as outlined below:

Variance Approval Condition #1

> The operator shall continue daily monitoring and resolution of significant litter problems along the facility access road. Prior to the initiation of waste disposal activities, the operator shall implement a quarterly litter collection program along the facility access road, beginning at Highway 20 and ending at the facility gate. The operator shall keep written records to document quarterly litter collection activities along the facility access road.

In order to address a local resident's concerning dust, the department is conditioning its approval of this variance request as outlined below:

Variance Approval Condition #2

> The operator shall make reasonable efforts to minimize and control dust problems between the facility gate and the paved portion of the facility access road. The operator shall keep written records to document dust minimization and control efforts.

Based on a review of the climatic conditions, soils, geologic formations, geologic structure, ground water hydrology, operating practices and final cover design, the department has concluded that proposed lateral expansion poses little if any potential threat to ground water resources in the area. The area's residents who rely on local ground water resources as their sole source of drinking water, however, are clearly uncomfortable relying on the department's technical analysis of this issue to assure them that this site will not impact their ground water. Therefore, in order to address these concerns and provide an additional level of protection to these residents, the department is conditioning its approval of this variance request on the installation of one (1) additional monitoring well down-gradient of the proposed lateral expansion area, as outlined below:

Variance Approval Condition #3

> Prior to the initiation of waste disposal activities, the operator shall install one (1) monitoring well down-gradient (i.e., down-dip) of the proposed lateral expansion area. The design and location of this well shall be approved by the department and this well shall be capable of monitoring the zone which has the highest potential for allowing leachate to migrate off-site. Once completed, this well shall be incorporated into the routine monitoring program for this facility.

In conclusion, the department has determined that variances from SWM Chapter 2, Section 3(a)(iii) "Distance to residences and other buildings", and SWM Chapter 2, Section 3(a)(iii) "Distance to drinking water sources" should be granted under the conditions described above. This finding is based on the determination that these variances will not injure or threaten to injure public health, safety, or welfare.

These findings have been reached after a complete analysis of all information provided by the applicant and the comments provided by the public. The department's findings on this matter may be appealed by sending a letter stating your objections to the Environmental Quality Council, Herschler Building, 122 West 25th Street, Cheyenne, Wyoming 82002, within sixty (60) days of the date on which these findings are signed.

SIGNED this 8 day of July, 1996.

DENNIS HEMMER, DIRECTOR
DEPARTMENT OF ENVIRONMENTAL QUALITY

PETITIONERS 26

1188

1189

1191

1192

1193

1195

PETITIONERS 27

Betty French

Homes and Landfill @ Photos

1. area view of homes - from Claybergs - left McKenzie, French Wentz - Sam on Right - from Susie Rockets hill -
2. 180° from home photos - showing land the city bought -
3. Walls pictures (test)
4. Road down to creek. Land on left of fence is city
5. Road coming up from bottom - golden field at end (Same road) of road is city property. for land fill.
6. Dump from West Ridge Road.
7. over Home (French) S.E ~~S~~. W. and - our well just to the L.
8. Dwight and the wall house cover -
9. ~~10~~. photo to dump area from our well the X on top of hill is where we were standing when we took photos 1 and 2
10. ~~11~~ looking same direction as #10 X taken from roof of our home.
12. S. side of French Home -
13. Our Son + 3 dogs enjoying our deck
14. Great Granddaughter and dog enjoying out side colors -
15. S. side of Claybergs house
16. Roger Wentz well.
17. looking from Roger Wentz well going W to landfill area.
18. W. side of Roger Wentz. home.


13


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14


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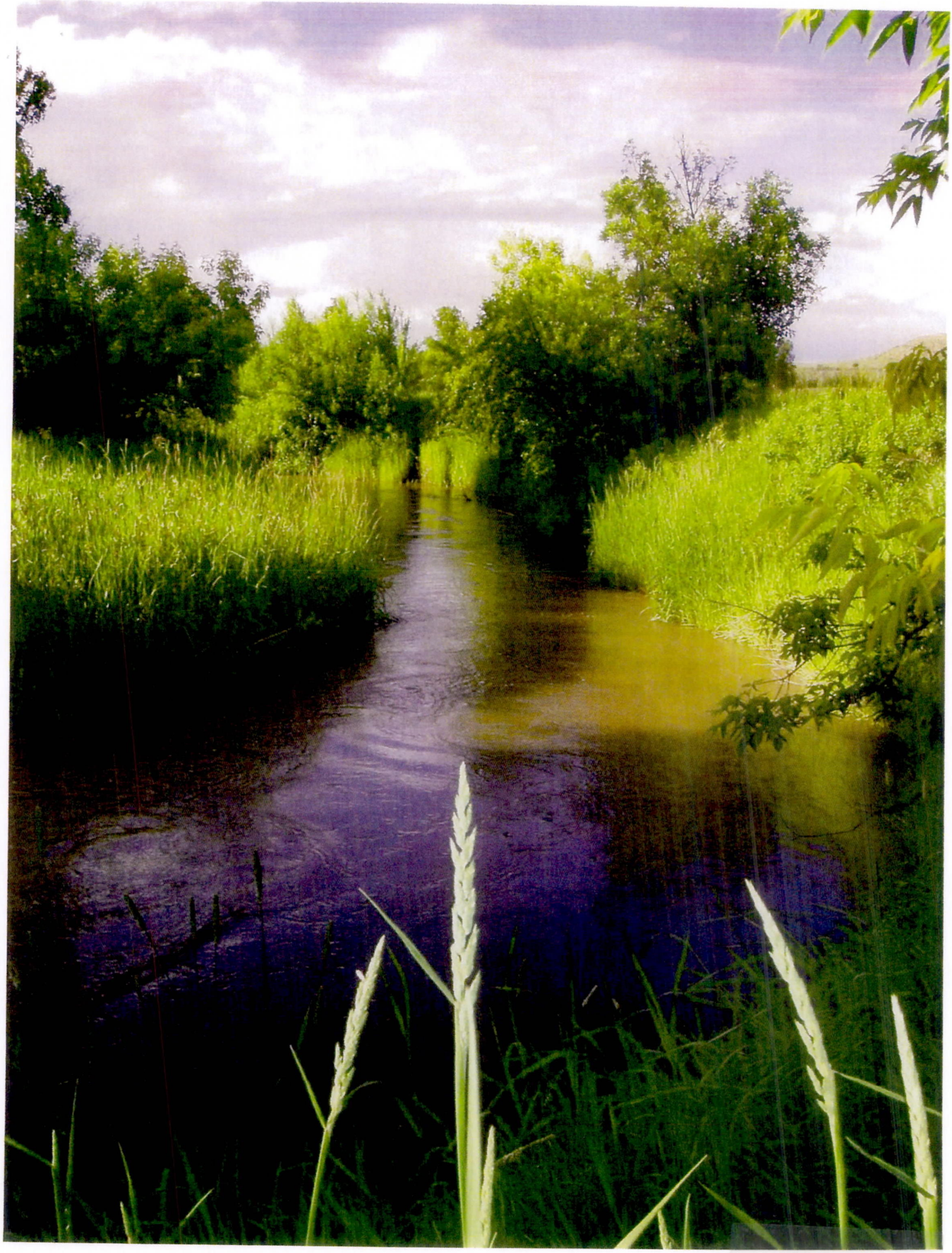
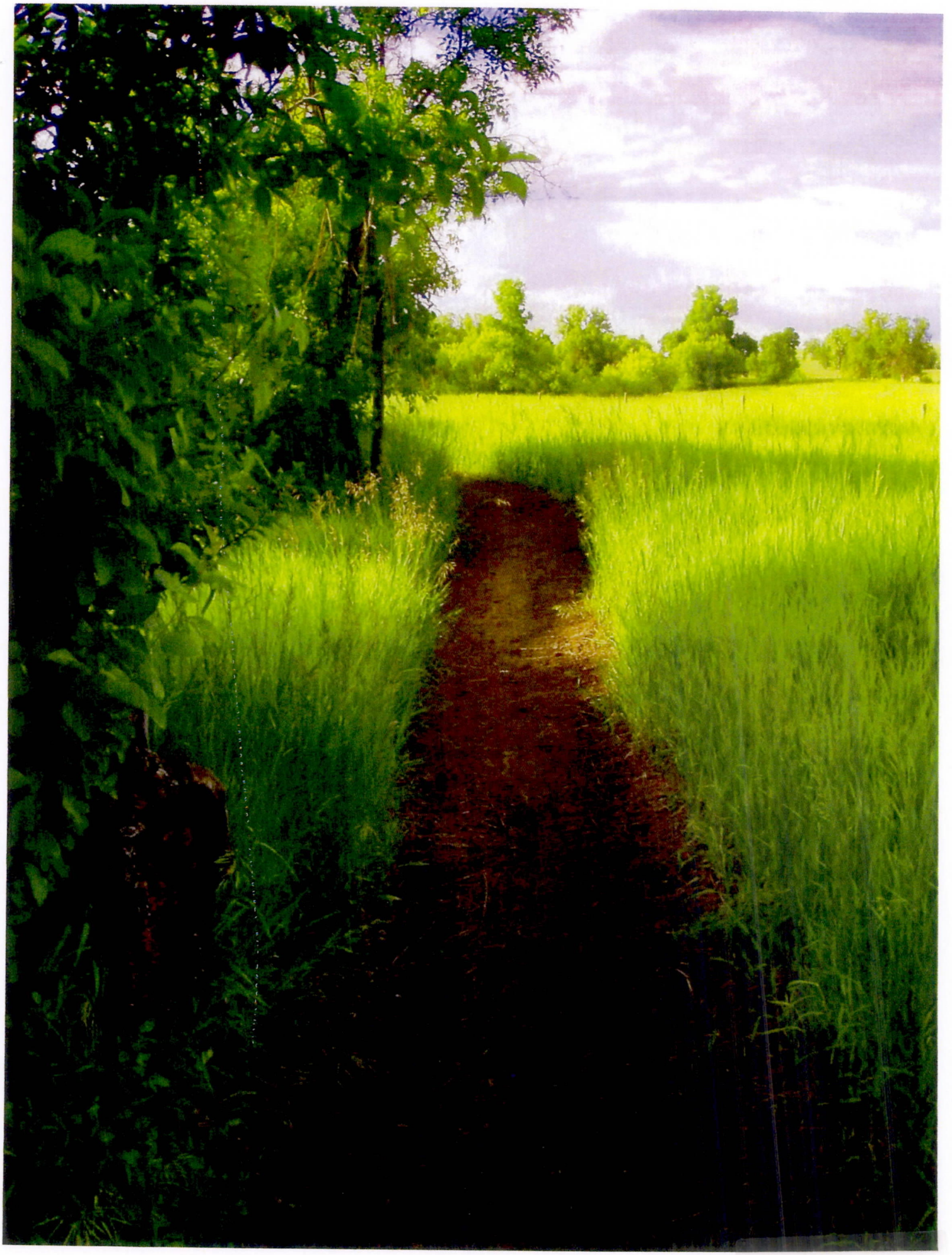
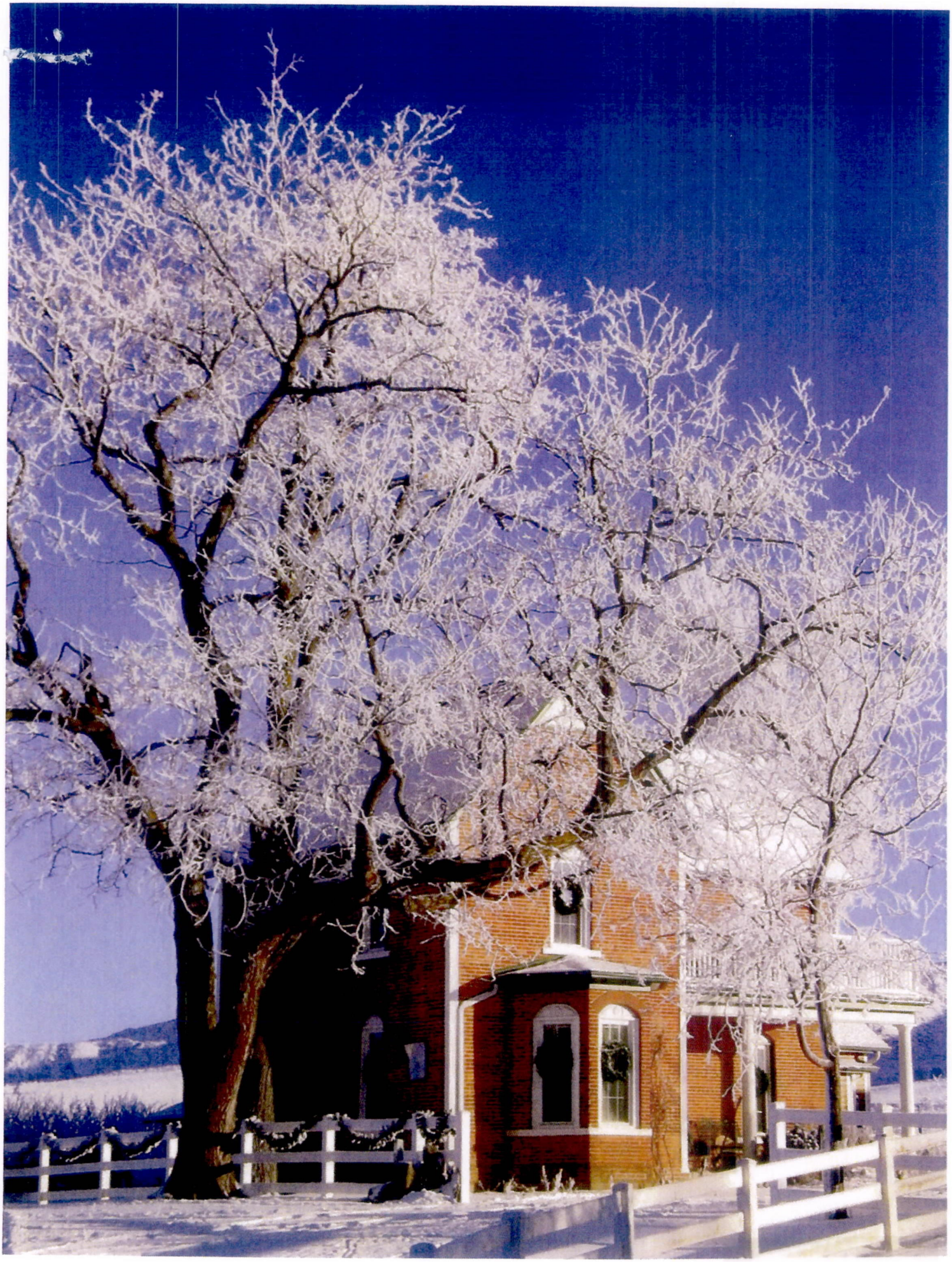
PETITIONERS 28

1202

1206



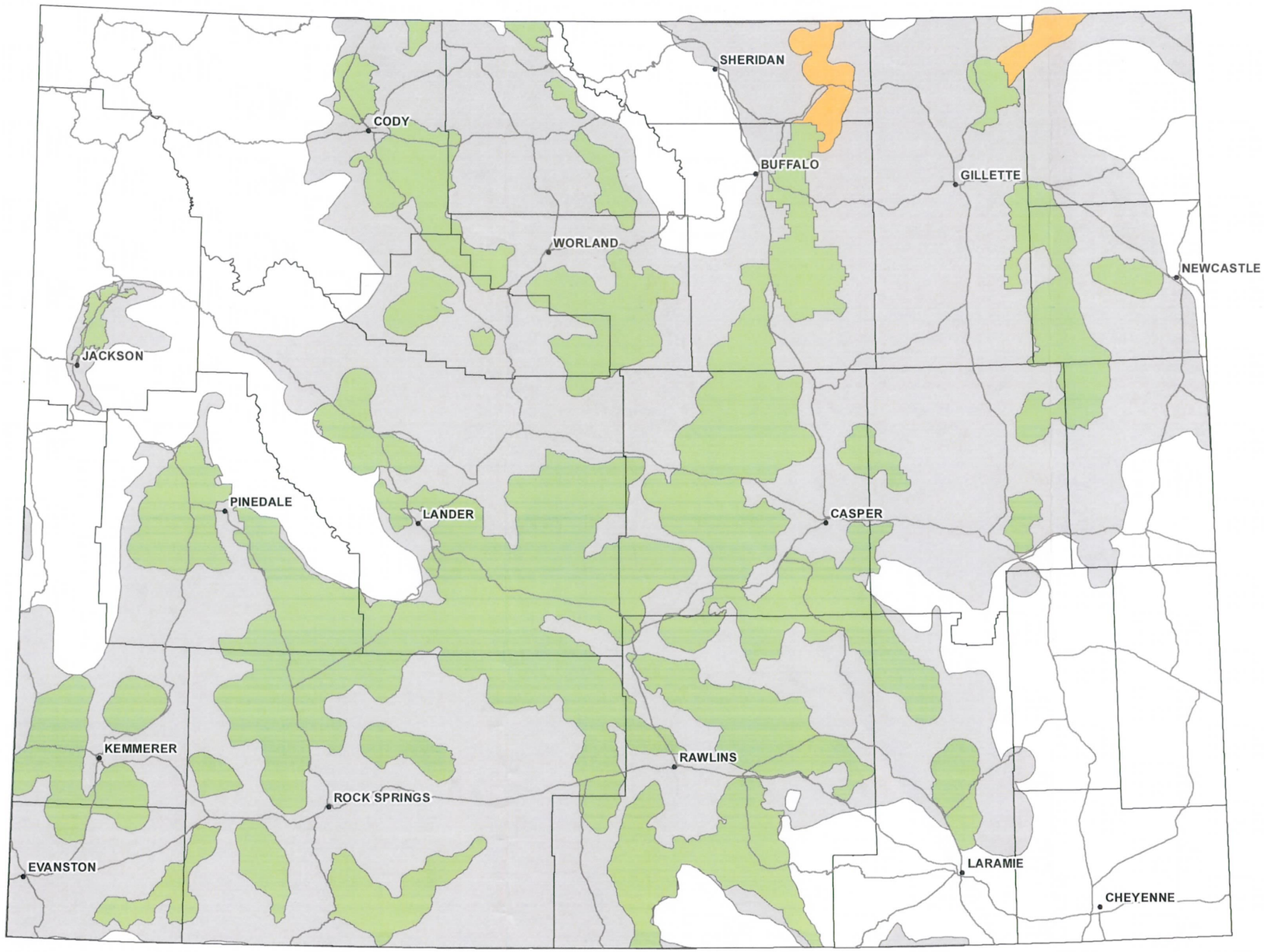




PETITIONERS 29

1221

Sage-Grouse Core Management Areas Version 3



Nyssa Whitford
Sage-Grouse GIS Analyst
Lander Regional Office
09.27.10

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0 15 30 60 90 120 Miles

- Cities
- Roads
- Counties
- Connectivity Areas
- Core Areas Version 3
- Current Sage-Grouse Distribution

Core Areas shown were updated from the version two core areas. The version three core areas were updated under the direction of the Governor by the Sage-Grouse Local Working Groups and the Sage-Grouse Implementation Team. The version 3 core areas were finalized on 06.29.10.

Publication #31


Little Mountain
Bighorn Lake
Tongue River
Sheridan
Sheridan County
Shell
310
Bighorn County
14
Bighorn River
Basin
16
Powder River
Campbell County
North Gillette
14
Buffalo
Johnson County
25
87
Hyattville
Gillette
16
90
Worland
16
Oregon Basin
Bighorn River
Washakie County
Washakie
Thermopolis
Buffalo
Johnson County
Powder River
Belle Fourche River
Campbell County
Newcastle
Thunder Basin
Natrona
87
Boysen Reservoir
50 km
40 mi
North Glenrock
WyGISC