LETTER OF TRANSMITTAL

Division of Water
Surface Water Permits Branch
Administrative Section
200 Fair Oaks Lane
Frankfort KY, 40601

DATE: 4/20/10 PROJECT:
ATTENTION: [redacted]
CLIENT: Wolverine Resources
PERMIT:

PLEASE FIND ENCLOSED/ATTACHED INFORMATION:

NO.	PERMIT NO.	DESCRIPTION
1	836-0348	SDAA and Representative outfall Extention request
1	836-0356	SDAA and Representative outfall Extention request

ADDITIONAL MESSAGE:

PREPARED BY: Nick Baker

ACKNOWLEDGMENT OF RECEIPT REQUESTED:

RECEIVED BY:

DATE RECEIVED:

RECEIVED
20 2010
DIVISION OF WATER

ENVIRONMENTAL RESOURCES MANAGEMENT CONSULTING CO., LLC
2265 HARRODSBURG ROAD, SUITE 200
LEXINGTON, KENTUCKY 40504
OFFICE (859) 381-1000, FAX (859) 381-1005

2265 Harrodsburg Road • Suite 200 • Lexington, Kentucky • 40504
phone (859) 381-1000 • fax (859) 381-1005

ENVIRONMENTAL RESOURCES MANAGEMENT CONSULTING COMPANY, LLC

19 April, 2010

RECEIVED
APR 20 2010
By

Division of Water:
Surface Water Permits Branch
Attn: Dan Juett
200 Fair Oaks Lane
Frankfort KY, 40601

RE: Coal General Permit Application for Wolverine Resources Surface Mine
KDSMRE Permit # 836-0348.

Dear Mr. Juett,

Please find enclosed one (1) original copy of the SDAA associated with the above referenced permit number in response to the NOD Issued on July 13, 2009. Please also find enclosed the Representative outfall extension request.

Should you require any additional information or need any clarification, please feel free to contact me at 859-381-1000.

Sincerely,

Nick Baker
Vice President and Environmental Scientist

KPDES FORM SDAA

RECEIVED
APR 20 2010
By

Kentucky Pollutant Discharge Elimination System (KPDES)

Socioeconomic Demonstration and Alternatives Analysis

The Antidegradation Implementation Procedure found in 401 KAR 10:030, Section 1(3)(b)3 requires KPDES permit applications for new or expanded discharges to waters categorized as "Exceptional or High Quality Waters" to conduct a socioeconomic demonstration and alternatives analysis to justify the necessity of lowering local water quality to accommodate important economic or social development in the area in which the water is located. This demonstration shall include this completed form and copies of any engineering reports, economic feasibility studies, or other supporting documentation

I. Project Information

Facility Name:Wolverine Resources 836-0348

Location:Approximately 2 miles W from junction of KY 114 and Rough & Tough Branch	**County:Floyd and Magoffin**

Receiving Waters Impacted:Rough and Tough Branch, Mill Branch, Salt Lick Branch

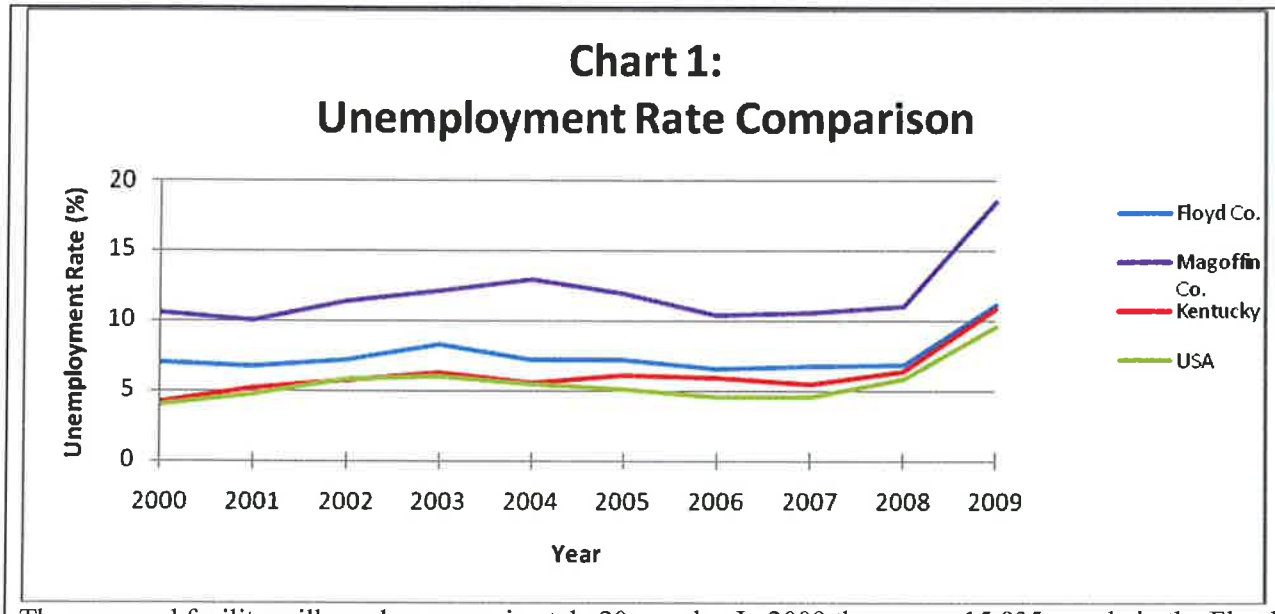
II. Socioeconomic Demonstration

1. Define the boundaries of the affected community:
(Specify the geographic region the proposed project is expected to affect. Include name all cities, towns, and counties. This geographic region must include the proposed receiving water.)

The proposed project is expected to affect the Eastern Coal Field region within the Central Appalachian Ecological region including various unnamed tributaries to Rough and Tough Branch, Mill Branch, and Saltlick Branch. Also affected by this project and located within Floyd and Magoffin Counties are the city of Prestonsburg and the communities of David, Blue River, Gapville, and Brainard.

2. The effect on employment in the affected community:
(Compare current unemployment rates in the affected community to current state and national unemployment rates. Discuss how the proposed project will positively or negatively impact those rates, including quantifying the number of jobs created and/or continued and the quality of those jobs.)

From 2000 through June of 2009, the unemployment rate in Floyd County has ranged from 7.0% to 11.1% while the Magoffin County unemployment rate has ranged from 10.6% to 18.5%. During the same time period, the unemployment rate in Kentucky has ranged from 4.2% to 10.8% and the United States of America has varied from 4% to 9.6% during the same time period (Workforce Kentucky).

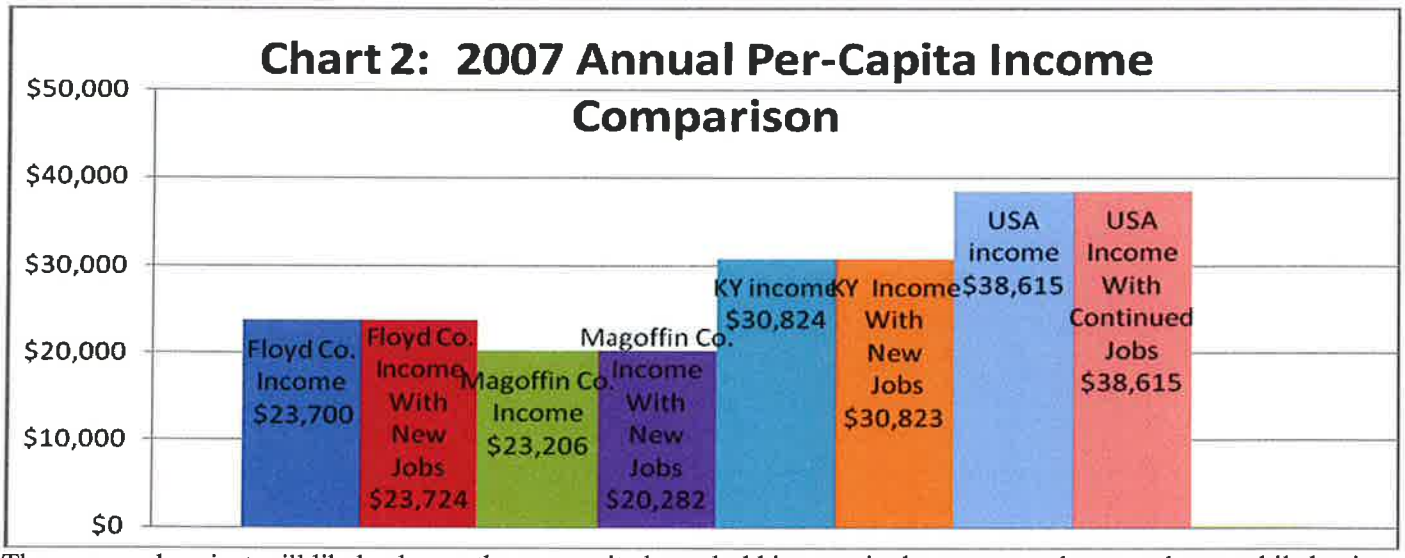


The proposed facility will employ approximately 20 people. In 2009 there were 15,835 people in the Floyd County workforce with 1751 unemployed, yielding a 11.1% unemployment rate. In 2009 there were 4,571 people in the Magoffin County workforce with 844 unemployed, yielding a 18.5% unemployment rate. In 2009 there were 2,080,409 people in the Kentucky workforce with 217,537 unemployed, yielding a 10.5% unemployment rate. In the same year there were 139,877,000 people in the USA workforce with 14,265,000 unemployed, yielding a rate of 10.2% unemployment rate. Using these figures and assuming an equal distribution of direct jobs created for each county, the unemployment rates for Floyd and Magoffin Counties would drop to 11.0% and 18.29%, respectively. The unemployment rate for Kentucky would drop to 10.45%. The unemployment rate for the USA would remain unchanged by the proposed project.

The 20 jobs created by the proposed operation will garner approximately $1,000,000 in annual wages for the new employees, averaging $50,000 annually per employee. These jobs will be high quality, permanent in nature, and will be a source of sustained income for the employees hired. In addition to boosting the per capita income for the surrounding communities and the state as a whole, the proposed project will provide its workers with an attractive benefits package including, but not limited to, health, dental, and disability insurance and retirement plans. It is also estimated that seasonal employees will be added to the workforce during the summer months and holidays to supplement potential production loss from employee vacation and personal time. According to 2007 estimates, average per-capita income for all citizens in the Floyd and Magoffin County workforce amount to approximately $23,700 and $20,206, respectively. Without this project Floyd and Magoffin County will not benefit from at least 20 new jobs and $1,000,000 in wages. Utilizing the 3:1 ratio of direct and indirect jobs created by the Kentucky coal industry, this proposed project will create 34 new jobs that are permanent in nature with an additional 90 jobs continued in other fields that provide services to the mining industry. These jobs include, but are not limited to, engineering services, equipment supply and maintenance, fuel and lubricant suppliers, and non-mining related suppliers of items such as food services, real estate, and education. During the 2006-07 fiscal year, coal mining in Floyd and Magoffin Counties generated approximately $5,399,256 and $2,054,080, respectively, in coal severance tax dollars. The proposed project will produce approximately $2,300,000 in tax dollars at current coal spot market prices.

II. Socioeconomic Demonstration- continued

3. The effect on median household income levels in the affected community:
(Compare current median household income levels with projected median household income levels. Discuss how proposed project will positively or negatively impact the median household income in the affected community including the number of households expected to be impacted within the affected community.)



The proposed project will likely change the per-capita household income in the county and state at large, while having a neutral affect to the per-capita household income for the United States of America (USA). Assuming an equal distribution of the 20 direct jobs created and $1,000,000 in wages from these jobs, the average per capita income for a resident of Floyd County, Magoffin County, and Kentucky rose.

The market value of taxable property in the county will also benefit through the increased wages and additional disposable income made available to county residents both directly and indirectly. The proposed project will positively affect the surrounding communities by being directly responsible for the creation of 20 new jobs and indirectly responsible for the continuation of an estimated 90 new jobs in fields that provide services to the mining industry.

The company will also provide an attractive benefits package to its employees that will include items such as health insurance, retirement plans, and dental and disability insurance. This will allow for households in the area to improve their living conditions through home improvement, new home construction, better access to medical care, and the creation of generational wealth through company backed savings and retirement plans. Social gains will also be made to the area through educational opportunities created through the increase in household income.

4. The effect on tax revenues of the affected community:
(Compare current tax revenues of the affected community with the projected increase in tax revenues generated by the proposed project. Discuss the positive and negative social and economic impacts on the affected community by the projected increase.)

During the 2006-07 fiscal year, coal mining in Floyd and Magoffin Counties generated approximately $5,399,256 and $2,054,080, respectively, in coal severance tax dollars. The proposed project will produce approximately $2,300,000 in tax dollars at current coal spot market prices over the life of the mine. Each county will receive approximately $1,426,000 and $874,000 respectively. This proposed project will provide socio-economic benefits to the local communities through an overall increase in per capita income and an attractive benefits package to new workers allowing local households to benefit from enhanced living conditions through home improvement, new home construction, better access to medical care, the creation of generational wealth through company backed savings and retirement plans, and increased educational opportunities.

II. Socioeconomic Demonstration- continued

5. The effect on an existing environmental or public health in affected community:
(Discuss how the proposed project will have a positive or negative impact on an existing environmental or public health.)

Previous logging operations have affected the immediate watershed and surrounding communities to the proposed project area through the introduction of sediment-laden water to the local and regional watersheds. To remedy these problems and prevent any further influx of sediment-laden water to the local and regional watersheds the proposed project will create pond structures to improve the quality of the discharged water. These structures will provide sediment control for the proposed project until Phase II bond release and subsequent pond structure removal and reclamation. Once the proposed project is completed the area will be reclaimed to approximate original contour and planted with trees and grasses thus creating a more balanced ecological environment. On-site trash collection and reclamation activities such as replacing topsoil and hydroseeding will help ameliorate the immediate and surrounding communities. The proposed mining will provide jobs that have benefits such as health insurance. This insurance will provide the employees with coverage for them an their families. This health insurance will help to improve the public health of the communities where the mining is proposed.

With regards to public health, an existing study from West Virginia has linked past coal production methods with elevated risks for certain health problems in the surrounding communities (e.g. heart disease, diabetes, lung and kidney diseases). Though the reasons for the elevated risks are currently only speculation, the pattern observed is believed to be a result of exposure to coal dust and polluted water released from coal washing. It should be noted that management practices are now utilized to reduce dust problems surrounding mine sites including the watering of haul roads. Also worth noting is that for this specific mine no coal washing will be performed.

6. Discuss any other economic or social benefit to the affected community:
(Discuss any positive or negative impact on the economy of the affected community including direct and or indirect benefits that could occur as a result of the project. Discuss any positive or negative impact on the social benefits to the community including direct and indirect benefits that could occur as a result of the project.)

The proposed project will provide additional socio-economic benefits to the surrounding communities through infrastructure development. Creating additional access roads in the remote areas of the proposed project area will provide local residents the opportunity for future development in areas that could not have previously supported such improvements. The potential for creating pond structures along with additional access roads provide available fire control to once remote areas primed for future development. The local highway system will also benefit from the proposed project through tax revenues anticipated to provide local and regional roadway improvements.

III. Alternative Analysis

1. Pollution prevention measures:

(Discuss the pollution prevention measures evaluated including the feasibility of those measures and the cost. Measures to be addressed include but are not limited to changes in processes, source reductions or substitution with less toxic substances. Indicate which measures are to be implemented.)

The underground mining method was considered as an alternative to the surface mining methods proposed. However, using the underground mining method for coal extraction would affect the socio-economic benefits. Additionally, due to the lack of a minimum depth of the coal seams to be mined, the splits associated with the coal seams, and the overlying strata not being sufficient size or type to provide adequate protection for the underground miners, this alternative was dismissed.

Containing the discharge in septic systems, or cisterns, was considered for on-site storage. Septic systems are not designed to handle water of this type. They are intended to breakdown organic and biodegradable materials. Use of such a system would essentially serve the same purpose as a sediment pond. Cistern use for storing the excess water is available at a price of $65,000 per 75,000 gallon cistern, thus bringing an additional $1,327,580 to the cost of excess water storage for the proposed project.

More advanced treatment options were considered, such as a wastewater treatment plant. The design runoff was calculated by using the SEDCAD computer model developed at the University of Kentucky. Using a 25-year/24-hour storm model for the projected project area could potentially produce 1,531,824 gallons of runoff in just one rainfall event. The nearest downstream public water supply to the proposed project is located 11.4 river miles downstream in Prestonsburg, KY and is equipped to treat a maximum of 1 million gallons of water per day. Conservative estimates suggest that to upgrade a wastewater treatment facility to treat the estimated 1,531,824 gallons of water would cost approximately $2.00 per gall of excess water entering the plant. That cost includes increased treatment costs as well as the expansion of the plant, and increase water seeettlemnet basins. The total for the upgrade of the Prestondburg water treatment plant would be approximately $3,000,000.

Chemical treatment options at the public water supply were also considered for the proposed project site. Costs for chemical treatment can vary and are specific to each individual pollutant entering the facility and can typically range from $0.50 to $4/gallon. Assuming 1,531,824 gallons of water generated from the 25-year/24-hour storm model and an average cost of approximately $2.25/gallon for the use of necessary chemicals will cost approximately $3,446,604 to chemically treat the discharge from the proposed site.

Other alternative treatments were considered for the site such as the use of silt fences and straw bales, but were inadequate for the scale of the proposed site.

Other pollution prevention measures for the proposed project include the use of on-site sediment control structures, or ponds. These ponds will be utilized on the bench of the active mining area and as in-stream structures placed beneath hollow fill toe as wastewater treatment measures to ensure proper particle settling of all onsite water resources prior to off-site discharge. The ponds will be constructed incrementally in conjunction with the proposed mining plan to ensure proper containment and treatment of on-site wastewater. The construction and maintenance of the pond structures associated with the proposed project will cost approximately $600,000 for the life of the mine. The current wastewater containment and drainage control plan for the proposed project are the measures to be implemented.

2. The use of best management practices to minimize impacts:
(Discuss the consideration and use of best management practices that will assist in minimizing impacts to water quality from the proposed permitted activity.)

Best Management Practices (BMPs) will be utilized by this proposed project anticipating minimal disturbances in the construction and maintenance of pond structures designed to contain all water collected onsite. BMPs proposed for this application include minimizing surface disturbances, land grading, rip-rap placement where deemed necessary, progressive revegetation, mulching, temporary silt control where practical, and rock check dams to aid in wastewater particulate settling.

Surface mining disturbances will obviously create a temporary increase in suspended and settleable solids concentrations in the run-off from the mine site during the active phase of the operation. However, the sediment control structures will capture and reduce the suspended matter in the surface run-off before the water is discharged into the receiving streams. Each structure has been appropriately designed to meet the established settleable solids limitations set forth by SMCRA regulations.

During the active phase of the mining operation, the coal will be uncovered and extracted in a timely manner in order to minimize the time during which the seam is exposed to atmospheric conditions. Stockpiled coal will be protected from extraneous water sources. By following the mining and reclamation plan for this proposed project, no short-term acidity problems are anticipated. In the neutral or slightly acidic pH range, iron and manganese are not highly soluble. Baseline water quality data from the drainage area indicated that the natural waters of the area are neutral to slightly acidic and generally exhibit low concentrations of metals. As long as the pH of surface water runoff from the mine area remains in the neutral range, high concentrations of iron and manganese are not anticipated.

The proposed project will utilize the proposed mining and reclamation practices to prevent or minimize pollutants in the collection of on-site wastewater. Practices which may be utilized to minimize water pollutants include, but are not limited to, the following: land shaping to improve stabilization; diverting runoff to appropriate ponds for storage; quickly germinating and growing stands of temporary vegetation to prevent further sedimentation problems; regulating channel velocity of water; lining drainage channels with rock or vegetation; and mulching.

3. Recycle or reuse of wastewater, waste by-products, or production materials and fluids:
(Discuss the potential recycle or reuse opportunities evaluated including the feasibility of implementation and the costs. Indicate which of these opportunities are to be implemented)

The only significant reuse of water for the proposed permit operation would be redistribution over the mine area. On-site water redistribution is limited to watering haul roads for dust suppression, hydroseeding for reclamation, and watering of reclaimed areas. Typically, water redistribution of this type is limited to 1000 gallons/day/acre on slopes of 6% or less. However, with the terrain of the proposed project area contains slopes averaging approximately 40% and a possible runoff produced by a 25-year/24-hour storm in excess of 1,500,000 gallons, onsite redistribution would not be feasible. With 473 acres of proposed surface disturbances and slopes of 40% onsite, approximately 200 gallons/acre, or 94,600 gallons, of runoff could be reused on the total proposed project area. This leaves an excess of 1,437,224 gallons of water. Collecting and recycling the runoff on-site would require approximately 4 miles of pipe at a cost of $60/foot and pumping stations for each at a cost of $150,000 per station for a total cost of $4,100,000. Cistern use for storing the excess water is necessary at a price of $65,000 per 75,000 gallon cistern, thus bringing an additional $1,327,580 to the cost of the proposed water recycling. Including removal of said piping, pump stations, and cisterns, the total cost of this proposed water recycling option would be approximately $10,000,000. Due to the economic and feasibility constraints associated with the containment of on-site water via piping and cisterns, water reuse will consist of on-site redistribution and containment within pond structures.

III. Alternative Analysis - continued

4. Application of water conversation methods:
(Discuss the potential water conservation opportunities evaluated including the feasibility of implementation and the costs. Indicate which of, of these opportunities are to be implemented)

Water conservation opportunities exist for the proposed project and will be implemented. One such water conservation technique is on-site water redistribution, which is limited to watering haul roads for dust suppression, hydroseeding for reclamation, and watering of reclaimed areas. The aforementioned water re-use techniques will come at a cost of approximately $100,000 annually. These methods for on-site water redistribution will be implemented. Another conservation method is the use of fire prevention and suppression throughout the proposed project area for the surrounding communities through the use of available water stored within on-site ponds.

5 Alternative or enhanced treatment technology:
(Compare feasibility and costs of proposed treatment with the feasibility and costs of alternative or enhanced treatment technologies that may result in more complete pollutant removal. Describe each candidate technology including the efficiency and reliability in pollutant removal and the capital and operational costs to implement those candidate technologies. Justify the selection of the proposed treatment technology.)

On-site water re-use is limited by local topography and designed pond structure storage capacity. The proposed project can produce over 1,500,000 gallons of water assuming a 25-year/24-hour storm model. With 473 acres of proposed surface disturbances and slopes of 40% onsite, approximately 200 gallons/acre, or 94,600 gallons, of runoff could be reused on the proposed project area. This leaves an excess of 1,437,224 gallons of water available and requires treatment.
One such treatment method is the use of an existing wastewater treatment facility. The nearest downstream wastewater treatment facility is located in Prestonsburg, KY approximately 11.4 miles away from the proposed project and has the ability to treat a maximum of approximately 1 million gallons of wastewater per day. The treatment options currently available at the existing wastewater treatment facility are limited with respect to sedimentation and one can expect further upgrade costs to accommodate removal of said pollutant. Upgrading the facility to handle close to twice its maximum daily load capacity would require more significant upgrades at a cost in excess of $3,000,000. The next option is storing the excess water generated on-site and at the treatment facility. To store the excess water would require the use of additional 2 acre-foot pond structures at both the proposed project and the wastewater treatment facility. At a cost of $25,000 per 1 acre-foot pond, one can expect a cost of approximately $3,500,000 to acquire the land, permits, and construct the ponds necessary to store the excess water. The excess water will reach its destination at the water treatment facility through a piping system or hauled by tanker truck. One option to move the water generated on-site to the treatment facility is the use of approximately 65,000 feet of pipe. At an estimate of $60 per foot for piping installation and 6 pumping stations at $150,000 each to assist gravity feeding, the cost of moving the water via an installed piping system is approximately $4,800,000. A second option for moving the water from the proposed project area to the treatment facility would be the use of 4,000 gallon capacity tanker trucks at approximately $63,000 per truck. To move the excess water and assuming a minimum number of trucks to maximize water transportation efficiency, the cost to transport water by tanker truck will be approximately $18,000,000.
The cost to upgrade the existing water treatment facility to sufficiently treat the excess water, and to transport and store the excess water generated by the proposed project will be approximately $8,000,000 to $22,000,000, depending on the treatment option.
Utilizing the proposed wastewater treatment plan, which provides sufficient removal of pollutants at an economically reasonable price of $600,000, is the most viable option currently available.

III. Alternative Analysis - continued

6. Improved operation and maintenance of existing treatment systems:
(Discuss improvements in the operation and maintenance of any available existing treatment system that could accept the wastewater. Compare the feasibility and costs of improving an existing system with the feasibility and cost of the proposed treatment system.)

The cost to upgrade the existing water treatment facility to sufficiently treat the excess water generated by the proposed project will be approximately $8,000,000 to $22,000,000, depending on the treatment option used. The nearest downstream wastewater treatment facility is located in Prestondburg, KY approximately 11.4 miles away from the proposed project and has the ability to treat a maximum of approximately 1 million gallons of wastewater per day. Chemical treatment options at the public water supply were also considered for the proposed project site. Costs for chemical treatment can vary and are specific to each individual pollutant entering the facility and can typically range from $0.50 to $4/gallon. Assuming 1,500,00 gallons of water generated from the 25-year/24-hour storm model and an average cost of approximately $2.25/gallon for the use of necessary chemicals will cost approximately $3,446,604 to chemically treat the discharge from the proposed site.
Other pollution prevention measures for the proposed project include the use of on-site sediment control structures, or ponds. These ponds will be utilized on the bench of the active mining area and as in-stream structures placed beneath hollow fill toe as wastewater treatment measures to ensure proper particle settling of all onsite water resources prior to off-site discharge. The ponds will be constructed incrementally in conjunction with the proposed mining plan to ensure proper containment and treatment of on-site wastewater. The ponds have all been oversized to ensure the complete treatment of all wastewater entering the ponds before it is discharged. The construction and maintenance of the pond structures associated with the proposed project will cost approximately $600,000 for the life of the mine. The design of the ponds ensures that regular maintenance of the ponds will contain all of the sediment discharge from the proposed site, and extra dredging of the ponds will not be necesitated. Floculation was assessed as a treatment optioin for the discharge, however it was determined that the ponds sufficiently treat the waste water from the site. The current wastewater containment and drainage control plan for the proposed project are the measures to be implemented.

7. Seasonal or controlled discharge options:
(Discuss the potential of retaining generated wastewaters for controlled releases under optimal conditions, i.e. during periods when the receiving water has greater assimilative capacity. Compare the feasibility and cost of such a management technique with the feasibility and cost of the proposed treatment system.)

Seasonal or controlled discharge of the excess water generated onsite during a 25-year/24-hour storm is best achieved through storage in pond structures. After on-site water recycling is achieved, a surplus of approximately 1,437,224 gallons of water will require the addition of approximately 10 pond structures at the proposed project and at the treatment facility. One can expect a cost of approximately $1,000,000 to acquire the land, permits, and to construct the ponds necessary to store the excess water. Storing the excess water in this manner will allow for a controlled or seasonal discharge at the discretion of the operator of the proposed project but at a more significant cost than the proposed treatment options.
Another pollution prevention measures for the proposed project include the use of on-site sediment control structures, or ponds. These ponds will be utilized on the bench of the active mining area and as in-stream structures placed beneath hollow fill toe as wastewater treatment measures to ensure proper particle settling of all onsite water resources prior to off-site discharge. The ponds will be constructed incrementally in conjunction with the proposed mining plan to ensure proper containment and treatment of on-site wastewater. The construction and maintenance of the pond structures associated with the proposed project will cost approximately $600,000 for the life of the mine. The current wastewater containment and drainage control plan for the proposed project are the measures to be implemented.

III. Alternative Analysis - continued

8 Land application or infiltration or disposal via an Underground Injection Control Well
(Discuss the potential of utilizing a spray field or an Underground Injection Control Well for shallow or deep well disposal. Compare the feasibility and costs of such treatment techniques with the feasibility and costs of .proposed treatment system.)

Underground injection was considered as an option for storing the excess water generated by the proposed project. Containing and storing the excess water onsite would require the installation of excess piping and pump stations. To collect the excess water generated by the proposed project, approximately 4 miles of pipe and 4 pumping stations would be required at a total cost of $4,100,000. The existing abandoned underground mines in the vicinity of the proposed permit area present a high risk level for areas of possible excess water discharge storage. In order to provide a safe alternative for subsurface disposal and/or storage of excess water discharge the abandoned underground mines must provide an impermeable medium. To provide an impermeable medium, the underground mine must have seals in place at each opening or entrance, must be absent from any bedrock fractures to prevent re-entrance into the groundwater and surface water systems, and must have enough storage volume to accommodate potentially 1,500,000 gallons of water. The abandoned underground mines in the vicinity of the proposed permit area also pose water quality concerns due to unknown amounts of water and the possibility of compromised quality of water currently being stored by the mine. The many levels of risk associated with injecting excess water discharge from the proposed surface mining operations into abandoned underground mines create a dubious option for water storage.
Injection into underground works or into a septic system could adversely affect the local groundwater supply by displacing any water in the area and creating a superfluous pressure-head. Such an increase in pressure-head will create the possibility for additional discharge from these areas and increase the chances for any blow outs which could ultimately prove to be a safety hazard. The injected water could possibly re-enter the ground water system and potentially the surface water system due to the likelihood of fractured geologic strata associated with the region. Other pollution prevention measures for the proposed project include the use of on-site sediment control structures, or ponds. These ponds will be utilized on the bench of the active mining area and as in-stream structures placed beneath hollow fill toe as wastewater treatment measures to ensure proper particle settling of all onsite water resources prior to off-site discharge. The ponds will be constructed incrementally in conjunction with the proposed mining plan to ensure proper containment and treatment of on-site wastewater. The construction and maintenance of the pond structures associated with the proposed project will cost approximately $800,000 for the life of the mine. Due to safety and economic factors, the current wastewater containment and drainage control plan for the proposed project are the measures to be implemented.

9 Discharge to other treatment systems

(Discuss the availability of either public or private treatments systems with sufficient hydrologic capacity and sophistication to treat the wastewaters generated by this project. Compare the feasibility and costs of such options with the feasibility and costs of the proposed treatment system.)

The nearest downstream waste water treatment plant to the proposed project is located 11.4 river miles downstream in Prestonsburg, KY and is equipped to handle a maximum of 1 million gallons of water per day. Assuming the on-site re-use of water, the proposed project is capable of generating approximately 1,500,000 gallons of water a day using a 25-year/24-hour storm model. Conservative estimates suggest that to upgrade a wastewater treatment facility to treat the estimated excess water would cost approximately $3,000,000.

Chemical treatment options at the public water supply were also considered for the proposed project site. Costs for chemical treatment can vary and are specific to each individual pollutant entering the facility and can typically range from $0.50 to $4/gallon. Assuming 1,500,000 gallons of water generated from the 25-year/24-hour storm model and an average cost of approximately $2.25/gallon for the use of necessary chemicals will cost approximately $3,375,000 to chemically treat the discharge from the proposed site.

The excess water will reach its destination at the water treatment facility through a piping system or hauled by tanker truck. To move the water generated on-site to the treatment facility, approximately 65,000 feet of pipe will be required. At an estimate of $60 per foot for piping installation and 6 pumping stations at $150,000 each to assist gravity feeding, the cost of moving the water via an installed piping system is approximately $4,800,000. A second option for moving the water from the proposed project area to the treatment facility would be the use of 4,000 gallon capacity tanker trucks at approximately $63,000 per truck. To move the excess water and assuming a minimum number of trucks to maximize water transportation efficiency, the cost to transport water by tanker truck will be approximately $18,000,000.

Depending on the choice of treatment facility upgrade, the choice of treatment option at said facility, and choice of moving the water from the proposed project to the treatment facility; one can expect the costs incurred for such treatment measures to be approximately $8,000,000 to $22,000,000.

Other pollution prevention measures for the proposed project include the use of on-site sediment control structures, or ponds. These ponds will be utilized on the bench of the active mining area and as in-stream structures placed beneath hollow fill toe as wastewater treatment measures to ensure proper particle settling of all onsite water resources prior to off-site discharge. The ponds will be constructed incrementally in conjunction with the proposed mining plan to ensure proper containment and treatment of on-site wastewater. The construction and maintenance of the pond structures associated with the proposed project will cost approximately $600,000 for the life of the mine. The current wastewater containment and drainage control plan for the proposed project are the measures to be implemented.

IV Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.			
Name and Title:	William Potter V.P.	**Telephone No.:**	(606) 889-8440
Signature:	William Potter	**Date:**	4-12-2010

Representative Effluent Sample Extension Request

Wolverine Resources, Inc. has attempted to obtain a water sample from a representative discharge point to represent the expected outfall of the proposed ponds associated with the 836-0348 KDSMRE permit. The request is being made for the outfalls from the following ponds:

1.) Pond# 1
2.) Pond# 1A
3.) Pond# 2
4.) Ponds A-T

A representative sample will be submitted to DOW within two years from the issuance date of this permit.

William Potter

Name and Title: Bill Potter / Vice President

Signature: William Potter Date: 4-12-2010