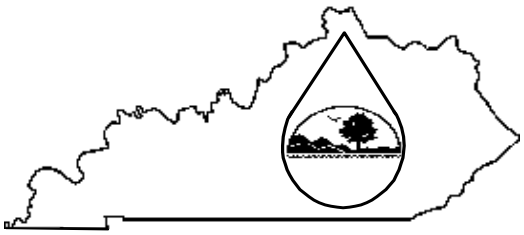
KPDES FORM SDAA



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: Little Creek – Harlan Mine #1

Location: Little Creek, 5 mi SE of Hwy KY72 and US421 Junction, N of Mary Alice	**County: Harlan**

Receiving Waters Impacted: Little Creek

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 revision includes an expansion of the surface area assoiciated with an existing permit for the underground deep mine, Harlan Mine #1. The existing permit includes a face up located 5 miles southeast of the intersection of State Route KY72 and US Route 421 in Harlan County. The underground area is located on North side of Little Creek Rd. The receiving water for the operation is Little Creek.

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.)

According to www.ers.usda.gov/Data/Unemployment, the unemployment rate in Harlan County is 11.6% (2010) compared to 10.0% in the state and 9.6% in the United States as of August, 2010 (www.dol.gov). This mining operation, if continued, will sustain jobs in the region to prevent an increase in the jobless rate.

The Harlan deep mine #1 is expected to produce coal for the next five years at minimum. The mine site anticipates continuing to employ 35 to 50 miners; and, it will maintain additional ancillary positions such as truck drivers, vendors, and suppliers as needed. There is also a coal preparation plant offsite but within Harlan County. This operation will sustain existing jobs in the region as jobs shift to this deep mine from other areas where operations are being completed. Failure of this mining operation to progress would result in loss of jobs within the area. Not only would mining and mining support jobs be put at risk, but local businesses may experience a slowdown if this mining operation were to cease.

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 households that will be economically or socially impacted by this project are those of the workers who will either gain jobs or maintain their existing jobs within the region. Additionally, the communities will benefit from sustained economic revenue due to mining in the area.

This mining operation will sustain jobs in the region to prevent an increase in the jobless rate. The median household income for the county is $28,503/year (www.ers.usda.gov). This deep mining operation is expected to continue to employ 35 to 50 miners and require 10-12 auxiliary positions. The jobs sustained through this mining operation will have a median yearly income of approximately $50,000. Failure of this mining operation to progress would result in loss of jobs within the area causing a sharp decrease in median household incomes for the community. Job loss, no matter the industry, always bears the negative impact of depression, decrease in social growth and desperation within the community as the unemployed must adhere to a more stringent budget and make sacrifices within the home as well as in regards to giving back to the community.

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.)

This deep mining operation will benefit the mining operator, the coal processing facility, local business, and the employees of each entity by sustaining jobs within the region. Production from the mining operation is expected to exceed 215,000 tons per year during the five year (minimum) planned production period. The following calculations estimate a portion of the federal and state tax revenue from coal production based on a $50/ton selling price:

a.	Federal excise tax at	$1.10/ton	=	$236,500/year
b.	Reclamation tax at	$0.35/ton	=	$ 75,250/year
c.	KY severance tax at	4.5% of sales	=	$483,750/year

The jobs sustained through this continued mining operation will have a median yearly income of approximately $50,000. Based on this salary and Kentucky's income tax rate of 2% to 6%, the federal income tax paid per person is approximately $2,700. Federal income taxes per person are approximately $8,690. For payroll taxes, social security paid per individual is estimated to be $6,200 (employee + employer=12.4%) and Medicare is $1,450 (employee + employer=2.9%). Kentucky's corporate income tax is 4 to 8.25%. Additionally, communities will be economically benefitted by this project. Service stations, shopping areas, restaurants, etc., owned and operated locally will benefit from the nearby project.

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.)

This project is currently ongoing and all efforts are being made to ensure minimal negative impacts to the existing environment. Drainage ditches and temporary sediment basins control runoff and sediment during mining activities through final bond release. The pond structures are used to improve the quality of stormwater discharged from the site. Reclamation of the face up area creates an edge effect in the revegetated area which is conducive to use by wildlife. Revegetation provides food sources for wildlife and reduces sediment loads to streams, thereby improving aquatic habitats. Although temporary disturbance may be considered negative in relation to environmental concerns, the final impact of the project will be positive with respect to public health and existing environmental conditions.

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.)

Production levels in the area will positively affect the socioeconomic condition of the area by sustaining approximately 60 -65 mining and ancillary positions within the community. The operation will increase travel through nearby communities resulting in sustained or increased sales at local businesses. Coal sales will maintain if not increase tax revenue in the area. Over 2.15 million tons of coal have been mined during the previously approved 5 (five+) year period resulting in roughly $483,750/year from the KY severance tax. If this project does not progress, there will not be tax revenue from the coal sales and there will be a decrease in the tax base due to the loss of jobs in the community.

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.)

One pollution prevention alternative is not carrying out the proposed mining project. However, this alternative would result in the loss of approximately 60-65 mining and ancillary positions which are in jeopardy as operations at other facilities are completed. Approximately 2,150,000 tons of coal would be left in the ground which would otherwise be mined and contribute to severance tax revenue ($483,750/year) over the next projected years mining period (estimated at 5yrs min). If this project does not progress, there will not be tax revenue from the coal sales and there will be a decrease in the tax base due to the loss of jobs in the community.

This is an approved underground mine which is currently in operation. The acreage addition proposed in Amendment 3 to the permit and in this KPDES revision enables the operation to continue in accordance with applicable regulations. Although surface mining was considered as an alternative to underground mining, the area cannot be surface mined for several reasons: (1) cemeteries may exist on the surface of the proposed area; (2) electric lines and gas wells are located on the surface; (3) the mining company does not have surface rights and there are many different surface owners; (4) the economic ratio of overburden to coal (e.g. 15:1 to 25:1) cannot be met over the proposed mining area; (5) surface disturbance to the entire permit area could be detrimental to the environment and wildlife habitats in the short term. Therefore, with the deep mine in place, it is the only economically feasible option at this time for the efficient extraction of resources.

There are numerous waste water treatment options currently available for the treatment and removal of settable solids from the effluent stream. These include reverse osmosis filtration systems, a system of thickeners and vacuum filters, sedimentation boxes, sedimentation ponds, sediment ditches, filter fabric fences, straw bales, etc. Diversion ditches, sediment fence, and sediment basins are generally the methods of choice when following regulatory and industry BMPs. These existing sediment controls were chosen for their widespread use, efficiency, and practicality. The proposed enlargement of Pond 3 is designed to adhere to the stringent engineering regulations of a 25 year/24 hour storm event using SEDCAD software. This program models how a basin effectively acts as a hydrologic control release valve; and, it allows consideration for storm event flows to accumulate in basins and be released in a timely, but controlled manner. There is no discharge that occurs from these designed basins during dry weather except the baseline stream flow.

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.)

There are numerous waste water treatment options currently available for the treatment and removal of settable solids from the effluent stream. These include reverse osmosis filtration systems, a system of thickeners and vacuum filters, sedimentation boxes, sedimentation ponds, sediment ditches, filter fabric fences, straw bales, etc. Diversion ditches, sediment fence, and sediment basins are generally the methods of choice when following regulatory and industry BMPs. For this project, sediment basins and diversion ditches are proposed as the principal sediment control practices due to their effectiveness, practicality, and economy. Drainage ditches and temporary sediment basins will control runoff and sediment during mining activities and until final bond release. The pond structures will improve the quality of stormwater discharged from the site. Upon completion of mining, a riparian buffer will be established adjacent to Little Creek. Reclamation of the face up area will create an edge effect in the revegetated area which is conducive to use by wildlife. Revegetation will provide food sources for wildlife and reduce sediment loads to streams thereby improving aquatic habitats.

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, of these opportunities are to be implemented)

The proposed permit revision is for expansion to the existing, approved surface area associated with a deep mine. Since there is no coal processing facility proposed for this site, the applicant does not anticipate that wastewater will be generated at the site. The stormwater runoff collected in the sediment ponds may be used for dust suppression underground with the continuous miner; this requires 10-15 gallons/min. However, the only ponds proposed are bench ponds which may not discharge continually. Water may also be used for hydroseeding, but the limited amount used during the few hydroseeding operations is negligible. Water cannot be reused for land application on slopes that are greater than 6%; the permit area and the much of the surrounding offsite area are (1) not agricultural and (2) have slopes that exceed 6% which hinders water reuse for land application. The existing sediment ponds, which are constructed and/or modified under the approved permit, will serve as alternate water sources for underground and above ground dust suppression. Using pond water will conserve stream water at all times which is critical during periods of dry weather and low stream flow.

III. Alternative Analysis – continued

4. Application of water conservation 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)

The proposed permit is for a surface area associated with an existing deep mine. Since there is no coal processing facility proposed for this site, the applicant does not anticipate that wastewater will be generated at the site. The stormwater runoff collected in the sediment ponds may be used for dust suppression underground with the continuous miner; this requires 10-15 gallons/min. Another 1,000 gallons/day may be used for dust suppression on access and haul roads. Water may also be used for hydroseeding, but the limited amount used during the few hydroseeding operations is negligible. Water cannot be reused for land application on slopes that are greater than 6%; the permit area and the much of the surrounding offsite area are (1) not agricultural and (2) have slopes that exceed 6% which hinders water reuse for land application. These existing sediment controls were chosen for their widespread use, efficiency, and practicality. The proposed enlargement of Pond 3 is designed to adhere to the stringent engineering regulations of a 25 year/24 hour storm event using SEDCAD software. This program models basins to effectively act as hydrologic controlled release valves; and, allows consideration for storm event flows to accumulate in the basins and be released in a timely, but controlled manner. During dry weather, no discharge should occur.

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.)

The proposed permit revision area is associated with a deep mine site. There are no existing treatment facilities for mine discharge or processing operations in this area. The closest treatment facility is the Blackey Water treatment plant in Whitesburg, KY. This plant is more than 50 miles away and travel would require more than an hour of haulage one way; therefore, the topography and geographic location of the facility alone prevents this plant from serving as an alternative. In addition, this facility is for residential sewage and commercial/institutional use and would not have the capacity to handle stormwater runoff from the Harlan #1mine site. The costs to upgrade this plant would be comparable to the project costs for building a new plant as described below.

The software CapdetWorks 2.5 by Hydromantis, Inc., was used to determine baseline costs for a new wastewater treatment plant. Using only a preliminary treatment process (mechanical screening) since the discharge is stormwater and solids are the primary pollutant of concern, the project cost was $14.2 million which includes the engineering design fee ($1.5M), lab and administration buildings ($1.7M), interest during construction ($1.1M), total labor costs of $140K/year, maintenance costs of $14K/year, energy costs of $5K/year, and etc. CapdetWorks did not allow cost estimation for WWTP removal, but an allowance of 10% of the total project cost should be added for deconstruction. The cost model was for a 10 MGD sewage plant. The peak flow at the sediment basin being modified, Pond 3, is 85.43 cfs when designed for a 25 year-24 hour storm event. The cost of this alternative is prohibitive.

The proposed sediment basins were designed using SedCad 4 for Windows. This program models the basin to effectively act as a hydrologic controlled release valve. Storm event flows accumulate in the basin and are released in a timely, but controlled, manner. During dry weather, no discharge will occur. Sediment basins are the most economical, practical, and widely accepted treatment for stormwater in this industry.

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 proposed permit revision area is a deep mine site. There are no existing treatment facilities for mine discharge or processing operations in this area. As previously described, the Blackey Wastewater Treatment Plant is a small facility located more than 50 miles away from the mining operation in another county near Whitesburg, KY. This facility is for residential sewage and light commercial/institutional use and would not have the capacity to handle stormwater runoff from the Harlan #1 mine site. A typical wastewater treatment plant upgrade exceeds $10 million not including the storage capacity that would be necessary to handle stormwater. Such an upgrade would be comparable to the new plant costs described in Item 5. The location of the current facility also does not have the space available for the footprint of the treatment and storage structures that would be necessary to handle stormwater from the proposed operation.

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.)

The proposed modifications to existing sediment basin, Pond 3, were designed using SedCad 4 for Windows. This program models these basins to effectively act as hydrologic controlled release valves. Storm event flows accumulate in the basins and are released in a timely but controlled manner. During dry weather, no discharge will occur. Water retained by the ponds may also be used for hydroseeding, but the limited amount used during the few hydroseeding operations is negligible. Water cannot be reused for land application on slopes that are greater than 6%; portions of the permit area and the much of the surrounding offsite area are (1) not agricultural and (2) have slopes that exceed 6% which hinders water reuse for land application. The sediment ponds, existing under the permit, will serve as alternate water sources for underground and above ground dust suppression. Using pond water will conserve stream water at all times which is critical during periods of dry weather and low stream flow.

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.)

The following considerations were made for on-site or subsurface disposal. Again there is no proposed or anticipated wastewater generation from the deep mine site; the only treatments are existing sediment ponds to control suspended solids associated with stormwater runoff.

Septic tanks: This type of system does not lend itself to the type of effluent associated with a mine operation. The typical septic system includes a sealed tank and an absorption field. The waste water moves through the septic tank and into the absorption field. From there the clarified waste water passes into the soil. At this point the waste water is treated by microbial action in the soil. It is critical that the absorption field is designed to provide a small even flow into the soil. Field size is based on the site soil characteristics and on the amount of waste water to be treated on a daily basis. Septic systems are not designed to handle large solids loads and will clog within a short period. As noted above, septic tanks rely on a biological process to treat waste water, not on a mechanical process to remove solids.

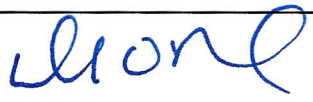
Even if a series of septic tanks were designed to treat this storm run off, physical constraints would limit the application of septic tanks. A typical septic tank and absorption field system will require a foot print of 0.1 to 0.25 acres to provide adequate dilution and distribution time. This size system would treat approximately 250 to 300 gallons per day or the amount generated by a typical four person household. In this case, the combined peak flow at Pond 3, 85.43 cfs would require at least 29,000 systems or a foot print of 2,900 acres. Even estimating a low figure of only $1,000/tank, the cost to use a series of tanks would surpass $30 million to have a system prepared to handle peak flows. Another design constraint would be the thin soil horizons normally associated with this region.

Spray irrigation: As mentioned in the Kentucky permit form MPA-03, the terrain in this area is steep (greater than 10%) and is not suitable for agriculture or irrigation. Besides the water used for dust suppression underground onsite, irrigation is not feasible due to the terrain being greater than 6% slope.

Subsurface injection: There are no known deep mine works below this deep mine seam elevation. Subsurface injection is not a viable alternative.

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.)

There are no existing treatment facilities for mine discharge or processing operations in this area; the nearest facility is over 50 miles from the mining operation. This facility, Blackey Wastewater Plant, is for residential sewage and light commercial/institutional use and does not have the capacity to handle stormwater runoff from the Harlan#1 mine site. The total direct distance from the most distant sediment ponds to the treatment facility is approximately 50 miles. If the facility was within one mile, the cost would be prohibitive: - $15/foot (materials and pipe installation) and $10,000 for a pump station, piping the stormwater would incur capital costs of cost $132,000. Actual pumping costs would exceed $792,000 per year. These basins will normally discharge during and shortly after rain fall or snow melt events; therefore, accurate cost could not be guaranteed or measured. The estimate alone is indicative that other treatment systems are not a viable option.

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:	**Derrick O'Neal, Attorney-in-fact**	**Telephone No.:**	(606) 573-1108
Signature:		**Date:**	**2/21/2012**