# KPDES FORM HQAA

AI # 93759

## Kentucky Pollutant Discharge Elimination System (KPDES)

### High Quality Water Alternative Analysis

The Antidegradation Implementation Procedures outlined in 401 KAR 5:030, Section 1(3)(b)5 allows an applicant who does not accept the effluent limitations required by subparagraphs 2 and 3 of 5:030, Section 1(2)(b) to demonstrate to the satisfaction of the Environmental and Public Protection Cabinet that no technologically or economically feasible alternatives exist and that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the water is located. The approval of a POTW's regional facility plan pursuant to 401 KRS 5:006 shall demonstrate compliance with the alternatives analysis and socioeconomic demonstration for a regional facility. This demonstration shall also include this completed form and copies of any engineering reports, economic feasibility studies, or other supporting documentation

## I. Permit Information

| | | | |
|---|---|---|---|
| **Facility Name:** | Apex Energy, Inc. (P. N. 898-0646 Amd. 1) | **KPDES NO.:** | ~~KYG04-4862~~ KYG045879 |
| **Address:** | 24044 State Highway, 194E | **County:** | Pike |
| **City, State, Zip Code:** | Fedscreek, Kentucky 41524 | **Receiving Water Name:** | Carver Fork of Paw Paw Creek. |

## II. Alternatives Analysis

| | Yes | No |
|---|---|---|
| 1. Has discharge to other treatment works been investigated? (If yes, then indicate which treatment works were considered and the reasons why that discharge to these works is not feasible.) | ☒ | ☐ |

**Alternative treatment works has been investigated. The nearest water treatment system is the Williamson Water Department's system approximately 50 miles away. It would cost approximately $3,984,000.00 (264,000 feet of pipe and pumps) to collect and gather the discharge. It would cost another $5,280,000.00 to send the discharge to the Williamson treatment plant. The Williamson treatment plant would require a sedimentation basin to remove the silt before allowing it to enter the plant. These costs prohibit this alternative. Another option for transport would involve the use of self-contained disposal trucks which would also be excessively expensive and impractical. Due to the topography of the area, several pump stations would also have to be constructed and bring these costs up even more.**
**Discharges will be the result of stormwater and drainage from the mine site. The stormwater will be received by Carver Fork of Paw Paw Creek of Knox Creek of the Tug Fork River.**

| | Yes | No |
|---|---|---|
| 2. Have other discharge locations been evaluated? (If yes, then indicate what other discharge locations have been evaluated and the reasons why these locations are not feasible.) | ☒ | ☐ |

**Alternate stream locations for the pond and dugouts will still discharge into Paw Paw Creek of Knox Creek of the Tug Fork River ultimately. Therefore, alternate locations will have no less environmental effect. Sites within the watershed boundary were deemed impractical due to existing land use, public safety, accessibility and/or right of entry. Also, these sites would not meet the criteria for a material storage area for this permit. To collect and gather the discharges is also cost prohibitive as it would cost approximately $3,984,000.00 to do this. Due to the topography the discharges could not feasibly be transported to other drainways. The closest drinking water intake is at Freeburn which is approximately 25 mile(s) away.**

## II. Alternatives Analysis - continued

| | Yes | No |
|---|---|---|
| 3. Has water reuse or recycle been investigated as an alterative to discharge? (If yes, then provide the reasons why it is not a feasible alternative | ☒ | ☐ |

**Using water from this project for on site dust suppression and for watering of reclaimed areas was considered but because the slope of the area is greater than 6%, the absorption rate would not support land application. Water used for dust suppression in a day would be about 15,000 gallons. This would be approximately 5% of the storm water of this permit area. The remaining 285,000 gallons of storm water would have to be pumped to a treatment plant. Dust suppression is only required during dry times when the flow of discharges is low or non existent. The cost to collect this amount of flow prohibits the use of all the flow generated. The cost to collect this water has been estimated at $3,984,000.00. Therefore, water reuse or recycle is not a feasible alternative. Also, There are no other facilities on site (preparation plant) that will require a raw water source. The drainways of all the ponds collectively is 141.1 acres, which would produce more storm water that could be utilized on site. The site would generally be able to use approximately 15,000 gallons a day during the rainy season.**

| | Yes | No |
|---|---|---|
| 4. Have alternative process or treatment options been evaluated? (If yes, then indicate what process or treatment options have been evaluated and provide the reasons they were not feasible.) | ☒ | ☐ |

**The discharges will be the result of storm water and drainage of the watershed as well as release of water from the dugouts, which are used in this project for sediment and drainage control.**
**As an alternative treatment option, a wastewater treatment plant was evaluated but deemed not applicable. The cost of a wastewater plant would be $250,000.00 and an additional $264,000.00 for pumping and or other water to gather the discharge to it. A major feat included is also getting the discharge to one plant due to the typography in the area. It is also normally designed for smaller drainage areas. Construction of other mines of sediment control facilities do not meet the Regulations as stated in 405 KAR 16:070 and are inadequate to handle this amount of flow.**

**If a plant was constructed and utilized for some of the storm water, there would be no need or future use of such site after mining. Prior to bond release the site would have to be dismantled and the site restored to pre-mining conditions. This would cost approximately 1,200 man hours at $20.00 and hour being $24,000.00.**

**This is a surface mining operation using a combination of area mining and contour mining with augering. This will only mine the remaining resources of the Alma and Elkhorn No.2 seam from previous contour mining. This method is the only method available due to the previous mining. This method is the only method available due to the previous mining and the coal thickness not being able to support underground mining. By the continuing mining operation such services as engineering, mine supplies, and training will be needed for the mining industry. Then this continuing operation will avoid the decrease of the area employment.**

**This area is also in the southeastern portion of Kentucky in Pike County. Mining jobs are few and this operator will provide opportunities for these type jobs to continue in the workforce. Without this operation, these jobs would have to be moved or lost to another area. This job will mine approximately 825,000 tons generally about $288,750.00 in severance tax of which Pike County will directly receive around 15%. The mining proposed not only provides new and increased economic service to the community, but prevents the loss of those benefits.**

**If other means of wastewater treatment was constructed on site the short lived need of storm water treatment would exceed the plants life expectancy. There would be no other use of such facility in the immediate area. It would not be cost effective to pump area wastewater up hill to the facility. Therefore the site would only have to be dismantled and sold for scrap metal.**

## II. Alternatives Analysis - continued

| | Yes | No |
|---|---|---|
| 5. Have on-site or subsurface disposal options been evaluated? (If yes, then indicate the reasons they were not feasible.) | ☒ | ☐ |

**Onsite and subsurface disposal options are not feasible alternatives. The installation of a sanitary septic system, i.e., septic tank was evaluated but is not an applicable option. Building a system large enough to handle the volume of water would be impractical. Septic systems are designed to degrade organic waste and biodegradable material over time by anaerobic digestion. While the source water would most likely contribute some organic material and some needed bacteria, this would be inadequate to decompose the sediment and would work essentially the same as a sediment structure. Also, the possibility of drilling an injection well (to inject the discharges underground) depending on depth could cost up to $50,000.00 per well. Injecting these discharges underground would also increase the potential of an outcrop blowout or blow out from an old adit. Injecting this water underground would also require a UIC Permit. There hasn't been found a suitable place to inject within a reasonable distance of this site. The stormwater and drainage will accumulate over time so that on-site or subsurface disposal will not be adequate over the long-term. The stormwater must be discharged from the project site.**

**There are no known underlying abandoned underground works in the area to receive such discharges if this was an option.**

| | Yes | No |
|---|---|---|
| 6. Have any other alternatives to lowering water quality been evaluated? (If yes, then describe those alternatives evaluated and provide the reasons why these alternatives were not feasible.) | ☒ | ☐ |

**The stormwater will be maintained in a dugout/pond prior to discharge. This will allow settling to occur so that lowering of water quality will be minimized based on applicable regulations concerning discharges from the project site. It is not feasible to store the water on-site, dispose of it below the surface, or construct a treatment facility for a short-term project. Accepting lower water quality standards would create additional burden and cost to this project. In order to lower the standards larger ponds would have to be built. For the embankment ponds this means more disturbances in the streams, larger volumes of water stored behind the embankments, and higher construction/removal costs (approximately $ 15,000.00 per pond. Avoiding this project is not a viable option as the advantages to the economic development of the Carver Fork area of Paw Paw Creek of Pike County would not be realized. Jobs would be lost, the tax base would diminish, and local business would not prosper.**

**The acceptance of more stringent discharge limitations is not cost effective or practical in these mining applications.**

## III. Socioeconomic Demonstration

1. State the positive and beneficial effects of this facility on the existing environment or a public health problem.

**Following the conclusion of mining, the area will be reclaimed, which will provide an enhanced habitat and environment. Once mitigation begins, the stream banks will be stabilized to prevent erosion, species indigenous to the area will be planted to establish an adequate riparian zone and stream channels will be rehabilitated to curb sedimentation. This will provide a healthier habitat for aquatic species and wildlife leading to a more balanced ecosystem. Additionally, recovery of the coal will increase severance tax revenues, which will be returned to the community. This money can be used for environmental protection such as sewage disposal, sanitation, and solid waste disposal, which will have beneficial effects on the existing environment. This area has been previously mined and logged. These areas will be re-established for regarding and revegetation in the mining areas.**

2. Describe this facility's effect on the employment of the area

**This mining operation will increase the amount of employment in the area for approximately 25 workers and provide higher paying jobs than other industries in the county. This will aide in bringing unemployment rates closer to the state and national averages. Mining pays an average weekly wage of $970.48 in Pike County compared to an average industry weekly wage of $547.27 (U.S. Bureau of Labor Statistics). The majority of these jobs provided for local residents of Carver Fork of Paw Paw Creek. This will also create or sustain approximately 35 workers indirectly.**

3. Describe how this facility will increase or avoid the decrease of area employment.

**This facility will avoid a decrease in the area's employment by providing jobs at a new mine, which will replace jobs at an existing facility upon closure. The operation of the facility will increase the area's employment by requiring services such as equipment sales and repair, engineering services, fuel, transportation, etc. It is likely that a new mine will lead to an increase in employment, but at the very least, by maintaining existing jobs, this facility will avoid decreasing the area's employment. A decrease in mining activities in the area would produce the detrimental effect of more unemployed residents, leading the area to economic distress. Therefore, this operation will provide for the continuation for the employment of the work force in place. All jobs associated with this operation will be permanent for the life of the mining operations.**

4. Describe the industrial or commercial benefits to the community, including the creation of jobs, the raising of additional revenues, the creation of new or additional tax bases.

**This mine facility has provided jobs to the Pike County, particularly the Carver Fork of Paw Paw Creek area. Without the additional mining area those jobs will be lost or moved to another area. The mine will provide new jobs or prevent the loss of jobs when an existing facility closes. Recovery of the coal located along Carver Fork of Paw Paw Creek and its tributaries will require payment of severance taxes (approximately 15%), which should be returned to Pike County to provide funds to establish alternative industries, as well as provide for public safety, environmental protection, public transportation, vocational training, health/recreational facilities, social services, industrial/economic development, workforce training, and secondary wood industry. In the past Pike County has also used those tax dollars to improve or maintain law enforcement, fire protection, ambulance service, libraries and educational facilities, and public parks.**

**Property values increase when land is active. Therefore, when mining is being conducted, the land has an increased value which requires increased property taxes be paid.**

5. Describe any other economic or social benefits to the community.

**The facility will require supporting jobs as well as mining jobs. Equipment sales and repair, mining/engineering consultants, and fuel/transportation providers will be needed as a result of the mine. The continuation of these jobs and the taxes collected because of it spurs community development and the creation of more jobs in Carver Fork of Paw Paw Creek and other surrounding communities in Pike County. It also provides additional revenue to the businesses of the area already in existence, which creates more jobs and development. The increased payments of property taxes will benefit schools so that they have better equipment and facilities and better paid teachers. Also, the increased tax payments will provide additional money for government services to better serve the citizens. After mining is completed the area will be utilized for many outdoor recreation activities. The additional mining should increase the coal severance tax by 6%. This will add an annual basis to the Pike County tax base.**

## III. Socioeconomic Demonstration - continued

| | Yes | No |
|---|---|---|
| 6. Will this project be likely to change medium household income in the county? | ☒ | ☐ |
| 7. Will this project likely change the market value of taxable property in the county? | ☒ | ☐ |
| 8. Will this project increase or decrease revenues in the county? | ☒ | ☐ |
| 9. Will any public buildings be affected by this system? | ☐ | ☒ |

10. How many households will be impacted by this project? **60**

11. How will those households be impacted?

**Pike County, as a whole, will be impacted by the increased revenues this mine will provide to the existing business, particularly around Carver Fork of Paw Paw Creek. The employees will be impacted positively with a more secure place of employment and higher than average income. These earnings will help these households to maintain or enhance their current economic status. This operation will directly employ approximately 25 full time employees. These will come from the area of Carver Fork of Paw Paw Creek. By this operation being a new job in the area. This provides opportunity for these positions that were previously unemployed by other jobs ending in the coal industry or else where. Also another 35 households will be maintained or supported from this mining operation in the immediate area surrounding Carver Fork of Paw Paw Creek. This brings much more purchasing power for the areas in or around Carver Fork of Paw Paw Creek in Pike County.**

**With the additional income of this mining operation and the tax revenues it generates, additional educational opportunities will be enhanced and/or created. With the full time employment benefits, medical care insurance will be provided to assist the workers and their families adequate health care. Also the coal severance tax revenues will provide more community services for the elderly and better police and fire protection in the area.**

**The average mining job in Pike County brings $970.48 per week with an annual average income of $50,465.00. This compares to an average salary in Pike County as $547.27 per week with annual income of $28,458.00. The average $22,007.00 extra income will generate $1,320,420.00 more revenue for Pike County per year.**

| | Yes | No |
|---|---|---|
| 12. Does this project replace any other methods of sewage treatment to existing facilities? ( if so describe how) | ☐ | ☒ |

**The project is not a sewage treatment facility. There are no existing sewage waste water discharges that this project could replace.**

| | Yes | No |
|---|---|---|
| 13. Does this project treat any existing sources of pollution more effectively? (If so describe how.) | ☐ | ☒ |

**Sediment control from prior mining will be improved. Existing over growth will be removed and channelization of receiving stream due to excessive silting will be improved. Prior to the state of this project, the mine site will be cleaned and all garbage material will be disposed of.**

## III. Socioeconomic Demonstration - continued

| | Yes | No |
|---|---|---|
| 14. Does this project eliminate any other sources of discharge or pollutants? (If so describe how.) | ☐ | ☒ |

**This site will provide better sediment control from run-off resulting from gas wells and logging in the permit area. After reclamation the drainway patterns will be established and sediment ponds/treatment will be removed and discontinued. The areas will be better established in grading and revegetated. Trees will also be planted to better the viewsheds of the area.**

15. How will the increase in production levels positively affect the socioeconomic condition of the area?

**The increase in production levels will be the result of mining in the watershed. This operation proposes to mine approximately 825,000 tons of low sulfur coal much needed to continue the electrical generation of our area. This generates high paying jobs, generates coal severance tax, and additional employment opportunities in the Carver Fork of Paw Paw Creek area of Pike County. Therefore, the project will provide jobs or maintain the current level of jobs in the area, increase tax revenues to pay for a variety of services, and provide other jobs such as engineering services and fuel/transportation providers. This will create additional revenue for the existing businesses of the Carver Fork of Paw Paw Creek and surrounding areas in Pike County. These additional revenues can provide increased benefits in public safety (law enforcement, fire protection, ambulance services) and aid in the industrial and economic development of the area.**

16. How will the increase in operational efficiency positively affect the socioeconomic condition of the area?

**The increase in operational efficiency will in turn increase the production levels leading to increased employment opportunities in the area, maintenance of existing employment, development and maintenance of indirect jobs and increase in the amount of personal and severance tax the area receives.**

**The proposed mining operation is to eliminate the highwalls, re-establish vegetation with trees and create a diverse habitat for wildlife. Thus eliminating the existing environmentally damaged areas and creating and enhancing the viewsheds. The operation will also provide much needed coal to help in our nation's energy crisis.**

**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:** | **J. Mark Campbell** | **Telephone No.:** | **(606) 835-9962** |
| **Signature** | | **Date:** | 11-29-07 |