UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

June 23, 2010

Colonel Keith A. Landry
District Engineer
Louisville District Corps of Engineers
Attn: David Baldridge (Regulatory Branch)
U.S. Army Corps of Engineers
OP-FN, Room 752
P.O. Box 59
Louisville, Kentucky 40201-0059

Subject: Czar Coal Corporation – Scaffold Lick Branch Coarse Refuse Storage Site (Kentucky Division of Mine Permits (KDMP) Permit No. 880-8002 A4) and Big Sandy Regional Airport Runway Extension (Corps Permit No. LRL-2008-00226)

Dear Colonel Landry:

The U.S. Environmental Protection Agency (EPA), Region 4, has reviewed Czar Coal Corporation's proposed Scaffold Lick Branch Coarse Refuse Storage Site project in Martin County, Kentucky. The proposed project is the fourth amendment (KDMP Permit No. 880-8002 A4) to an existing Surface Mining Control and Reclamation Act (SMCRA) permit for Czar Coal's Pinnacle Processing Preparation Plant and associated areas, and includes the construction of an additional coarse refuse fill (Refuse Fill No. 2) and borrow areas, and an existing sediment pond (Pond 22). Impacts include 2,012 linear feet (lf) of intermittent and ephemeral jurisdictional streams and 0.69 acres of jurisdictional wetland. The refuse fill will abut the Big Sandy Regional Airport (BSRA) to the north.

EPA's review of this project followed the Enhanced Coordination Procedures (ECP) for surface coal mining applications as detailed in the June 11, 2009, *Memorandum of Understanding among the U.S. Department of the Army, U.S. Department of the Interior, and the U.S. Environmental Protection Agency Implementing the Interagency Action Plan on Appalachian Surface Coal Mining*. The proposed project was placed on the final list of applications subject to the ECP on September 30, 2009, due to environmental concerns over the potential for further impact minimization, the adequacy of proposed compensatory mitigation, assessment of cumulative impacts, and the potential for downstream water quality impacts which could result from the proposed coarse refuse fill. The ECP process was initiated by the U.S. Army Corps of Engineers (Corps) Louisville District on April 14, 2010. Discussions among the Corps, the applicant and their consultant, and EPA prior to and during the ECP process have led to resolution of many of the concerns raised by us in our letter to you dated May 19, 2010. This letter reflects the agreements that have been reached during the ECP review period, as well as

other recommended actions we believe to be necessary to ensure compliance with the requirements of our regulations under section 404(b)(1) of the Clean Water Act (CWA) and as explained in EPA's April 1, 2010, guidance.

Avoidance and Minimization

The coarse refuse fill will be constructed over an existing hollow fill and associated sediment pond, and will utilize the existing downstream sediment pond, Pond 22. Pond 22 will be removed and restored to its original pre-mining condition following SMCRA Phase III bond release. In addition to the originally proposed avoidance and minimization measures, EPA recommended that the Corps conduct two additional alternatives analyses: 1) an analysis to evaluate the full life span and disposal needs of the preparation plant to adequately assess reasonably foreseeable impacts; and 2) an analysis of a two-fill design that compared the storage volume of both alternatives based on anticipated years of mining and the operational lifetime of the preparation plant. Czar Coal responded to these recommendations in a letter dated May 24, 2010.

Regarding the first additional alternatives analysis, Czar Coal clarified that the full life span of the preparation plant is 12 years, as determined by existing coal reserves. Coarse refuse disposal throughout the life of the plant will be provided by both the proposed coarse refuse fill (nine years) and reclamation of the Big Hollow impoundment (three years). Further, Czar Coal stated that the efficiency of the plant has been optimized using the most current technologies available with the addition of spiral upgrades in 2006 and column flotation in 2007. Regarding the second additional alternatives analysis, Czar Coal provided the requested two-fill design and analysis, finding that the two-fill design would reduce storage capacity by 37 percent. Given Czar Coal's operational needs and the lifetime of the preparation plant, this would not achieve the project's purpose and is, therefore, not a practicable alternative.

Based on the information provided to EPA, we agree with Czar Coal's clarification and conclusions for both additional alternatives analyses. EPA believes that their preferred alternative is the Least Environmentally Damaging Practicable Alternative if the applicant incorporates all of the best management practices (BMPs) outlined below under "Construction Best Management Practices."

Water Quality

As previously noted in our May 19, 2010, letter, the entire Scaffold Lick Branch watershed has been adversely affected by historic mining activities. Although Scaffold Lick Branch is currently unassessed by the Commonwealth, it is clear from data provided by the applicant and a recent study done by the EPA Region 4 Science and Ecosystem Support Division (SESD; *Czar Coal Scaffold Lick Branch Water Quality Study Final Report, Prestonsburg, Kentucky, February 2010*) that existing water quality is poor in Scaffold Lick Branch and its tributaries. SESD's water quality study included sampling Middle Fork Rockcastle Creek upstream and downstream of its confluence with Scaffold Lick Branch. The Middle Fork Rockcastle Creek data supports the Commonwealth's listing of this waterbody as impaired for mining-related constituents that should now potentially include selenium.

To address this degraded water quality in Scaffold Lick Branch watershed, EPA has worked with your staff to develop three special permit conditions to restore the water quality in Scaffold Lick Branch. These three special permit conditions are: 1) documenting BMPs initially implemented by the applicant (see "Construction Best Management Practices," below); 2) development of an adaptive management plan (AMP); and 3) chronic whole-effluent toxicity (WET) monitoring. These three conditions are designed to supplement Kentucky Division of Water's April 1, 2010, CWA section 402 Kentucky Pollutant Discharge Elimination System (KPDES) individual permit. The chronic WET monitoring will complement chemical and biological monitoring as currently required under the KPDES permit, and agreed to by EPA, and provide data to the Commonwealth to enable them to conduct a reasonable potential analysis and re-open the KPDES permit to add appropriate effluent limits, if necessary. The AMP will be based on a watershed-wide approach to address historic impacts in the Scaffold Lick Branch watershed and to improve existing water quality. These special permit conditions and a projected implementation timeline for the phased AMP are provided as enclosures to this letter.

Construction Best Management Practices

As noted above, a principal focus of our discussions has been to develop special permit conditions. Czar Coal has requested an initial period of time during which they will implement BMPs they identified to EPA in their May 3, 2010, "Response to U.S. Environmental Protection Agency Comments Dated February 4, 2010." These BMPs are as follows:

- sediment and erosion control measures will be inspected by a qualified individual appointed by Czar's management at least twice per month and after every rainfall exceeding 0.5 inches in a 24 hour period (as measured at the project site) to ensure the structures and measures are functioning properly and to identify any required maintenance;
- existing vegetation will be retained to the extent practicable;
- the coarse refuse material will be compacted as it is placed to reduce the void space between the particles and reduce for the potential for infiltration of water;
- diversions will be constructed around the fill so that surface runoff from upland areas will be intercepted and not infiltrate the coarse refuse material;
- temporary sediment control structures such as silt fence, straw bales, rock checks, dikes, and/or channel barriers will be used, as necessary, to prevent the transport of sediment downstream;
- the fill will be vegetated during construction after being brought to final grade to reduce erosion of the material;
- chemical treatment of the ponds will be used, if necessary and practicable, to facilitate compliance with the project's KPDES permit;
- aeration will be used in Pond 22, if necessary, to increase dissolved oxygen levels and to facilitate precipitation and settling of sediment and dissolved solids;
- acidic and toxic material encountered during the mining operation will be handled in accordance with the approved Toxic Materials Handling Plan from the SMCRA permit;
- diversion channels will be constructed to pass flows as dictated by the SMCRA regulations so as to prevent additional erosion and sediment transport from the disturbed areas; and

- topsoil or topsoil substitute, as approved by the Kentucky Department for Natural Resources in the SMCRA permit for this project, will be stockpiled and managed so that re-graded areas can be covered with a layer of topsoil or topsoil substitute as quickly as practicable to avoid exposure of the coarse refuse material to surface water runoff.

In addition to these BMPs, Czar Coal agreed to immediately implement two other actions: 1) to construct the underdrain using low-reactive, durable rock wrapped in filter fabric to prevent clogging of the underdrain; and 2) to identify and apply other readily available BMPs to reduce high conductivity sources in the Scaffold Lick Branch watershed. While EPA concurs with providing Czar Coal an initial period of time to demonstrate whether these initial BMPs improve water quality in Scaffold Lick Branch, there are other readily available practicable BMPs which would result in an improvement to the health of the watershed and should be implemented immediately. Some examples of readily available BMPs EPA believes should be implemented include:

- using a 'staged' construction approach to achieve the desired refuse fill storage capacity (see Enclosure 2). In this approach the applicant completes Stage 1 by constructing a 'stand alone' refuse fill in the right fork of Scaffold Lick Branch (RF1 in Enclosure 2). This initial stage allows the applicant to store coarse refuse material, while fulfilling the applicant's project purpose to expeditiously construct the BSRA runway expansion. Stage 2 consists of placing a 'stand alone' fill in the left fork of Scaffold Lick Branch (RF2 in Enclosure 2). Stage 3, the final stage, consists of constructing the refuse fill from the proposed design downstream toe location, located in the mainstem of Scaffold Lick Branch, and tying it to the previous 'stand alone' refuse fill configurations developed in Stage 1 and Stage 2. This staged approach to the construction of the refuse fill will allow EPA to evaluate water quality impacts incrementally as construction progresses, which ultimately should allow for improved implementation and potential success of the adaptive management plan;
- strictly adhere to progressive clearing and grubbing, as required by SMCRA. The applicant should only disturb those areas necessary to place refuse material in the immediate working area, which is the area consisting of the current lift elevation where refuse material is being placed, plus a reasonable distance for the underdrain to advance ahead of refuse placement. The reasonable distance of advance of the underdrain should allow for placement of fill in the immediate working area, without causing any potential adverse effects to the function of the underdrain, such as clogging or crushing;
- optimizing compaction through refuse material moisture control. The applicant should identify the optimum moisture content of the refuse fill material which would result in maximum achievable Proctor density;
- implementing the Forest Reclamation Approach (FRA) on the face of the fill and backfill areas as practicable to increase evapotranspiration and minimize infiltration through the fill (FRA includes: selecting the best available growth medium; minimize compaction of the upper layer of soil; selecting appropriate tree species; using compatible temporary grass cover; and using proper tree planting techniques);
- using flocculents designed specifically to reduce total suspended solids/ total dissolved solids /specific conductance in sediment control structures; and

- using floating siphons to decant the cleanest water from sediment control structures for discharge to receiving streams.

Adaptive Management Plan for Water Quality

Required water quality monitoring, beginning prior to construction and continuing through the life of the disposal site, will provide valuable data regarding the BMPs discussed above. EPA concurs with the applicant's belief that these practices will improve the quality of water being discharged from Pond 22 into Scaffold Lick Branch. However, as the efficacy of many of these practices with regard to the reduction of conductivity has not been quantified, an AMP will be implemented if the water quality goal of monthly flow-weighted average conductivity exceeds 500 µS/cm, as described in the attached special permit conditions.

In order to comply with the requirements of the CWA, EPA believes a phased approach to the AMP is necessary, increasing the level of response required over time until water quality goals are met. If the monthly flow-weighted average conductivity continues to exceed 500 µS/cm after the initial six months, Phase I of the AMP will be developed (see Enclosure 3, Projected Adaptive Management Plan Implementation Timeline). This AMP, developed by the applicant and approved by EPA and the Corps, must be based on the best technologically advanced approaches available for identifying and hydrologically isolating sources of elevated specific conductance and toxic materials. These techniques must be implemented throughout the Scaffold Lick Branch watershed, especially in areas that are actively being reclaimed under previous SMCRA permits.

If water quality goals are not met after an additional six months (16 months from permit issuance; see Enclosure 1, Special Condition #1 and Enclosure 3, Projected Adaptive Management Plan Implementation Timeline), Phase II of the AMP will be initiated. This plan will also be developed by the applicant and approved by the Corps and EPA, but should incorporate, at a minimum, the following actions:

- the applicant will enhance stormwater drainage control on the reclaimed mine benches through diffuse discharge to riparian zone using a weep berm-forest-passive treatment system; and
- the applicant will reforest 70 percent or more of the Scaffold Link Branch watershed using the Forest Reclamation Approach.

Compensatory Mitigation

Compensation for all proposed stream and wetland impacts, including 1,142 lf of intermittent stream, 451 lf of intermittent stream associated with mitigation for a previous Corps permit, 419 lf of ephemeral stream, and 0.69 acre of wetland, will be provided through payment of an in-lieu fee to the Kentucky Department of Fish and Wildlife Resources Wetland and Stream Mitigation Program (KDFWR), totaling $285,598.50. Historically, some permittee-responsible on-site mitigation for ephemeral streams has been provided by groin ditches, which EPA finds unacceptable because they do not replace all ecologically significant stream functions. EPA is engaged with the KDFWR as a member if the Interagency Review Team. We have been

involved with current revisions to the in-lieu fee instrument, and will continue to work to insure that the program fully embraces the April 10, 2008, Final Rule *Compensatory Mitigation for Losses of Aquatic Resources* (73 FR 19594-19705; 33 CFR Parts 325 and 332; and 40 CFR 230 Subpart J), including using a watershed approach, ecological performance standards, a compensation planning framework, appropriate monitoring and adaptive management requirements, and appropriate crediting and accounting to ensure that mitigation projects replace lost stream functions. Therefore, EPA concurs with the use of an in-lieu fee payment to satisfy mitigation requirements.

In conclusion, the applicant, Corps and EPA have worked through the special conditions which should ensure that the project will improve the existing water quality within the Scaffold Lick Branch watershed. There are mechanisms built into the special permit conditions which will allow emerging science to be integrated during project construction to achieve the identified water quality goals.

I want to thank you and your staff for your cooperation and willingness to address our issues. We look forward to working closely with you and the applicant to resolve the concerns outlined above. If you have any questions, please call me at 404-562-9470 or Stephanie Fulton of my staff at 404-562-9413.

Sincerely,

James D. Giattina
Director
Water Protection Division

Enclosures: 1) Special Permit Conditions
2) Staged Construction Diagrams
3) Projected Adaptive Management Plan Implementation Timeline

cc: Jim Townsend, Louisville District, Louisville, KY
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Lee Andrews, U.S. Fish and Wildlife Service, Frankfort, KY
Carl Campbell, Kentucky Department of Natural Resources, Frankfort, KY
Bruce Scott, Kentucky Department of Environmental Protection, Frankfort, KY
Sandy Gruzesky, Kentucky Division of Water, Frankfort, KY

Enclosure 1

Draft Special Permit Conditions

1. The permittee must submit monthly flow-weighted conductivity, $\overline{K}$, for the effluent of Pond 22 following the commencement of discharges of material into "waters of the U.S.," to the U.S. Army Corps of Engineers Louisville District (Corps) and the U.S. Environmental Protection Agency, Region 4 (EPA). Monthly flow-weighted conductivity shall be calculated as follows:

$$\overline{K} = \frac{\sum_i (Q_i \times K_i)}{\sum_i Q_i}$$

where:

$\overline{K}$ = monthly flow-weighted conductivity, µS/cm
Qi = flow for the ith sample, cfs
K_i = conductivity for the ith sample, µS/cm.

The monthly flow-weighted conductivity, $\overline{K}$, will be plotted as a time series and the trend in effluent conductivity calculated by linear regression. This data must be received by the agencies not more than 30 days following the date of the sample collection. If, after monitoring the Pond 22 effluent for six months, the trend indicates that the monthly flow-weighted conductivity will remain above 500 µS/cm, or if any three subsequent consecutive monthly flow-weighted conductivity values exceed 500 µS/cm, then the permittee will conduct an analysis of the sources of effluent conductivity and develop an Adaptive Management Plan (AMP) to reduce effluent specific conductance (SC) and total dissolved solids (TDS). The conductivity trend analysis and AMP shall be submitted to the Corps and EPA for approval within 30 days. The AMP shall be implemented within 45 days of written approval by the Corps and EPA. AMP implementation will continue until the trend indicates that monthly flow-weighted conductivity will fall below 500 µS/cm or any three consecutive monthly flow-weighted conductivity values fall below 500 µS/cm. If either the trend or monthly flow-weighted conductivity values exceed 500 µS/cm continually for six months after implementing the AMP, the permittee will retain, within 30 days, a consultant mutually agreed upon by the permittee, the Corps and EPA. The consultant shall prepare within 90 days recommendations for additional actions to reduce effluent conductivity. These recommendations shall be implemented within 45 day of written approval by the Corps and EPA. This requirement will reiterate every six months after implementation of the approved additional actions as long as the trend or monthly flow-weighted conductivity values exceed 500 µS/cm.

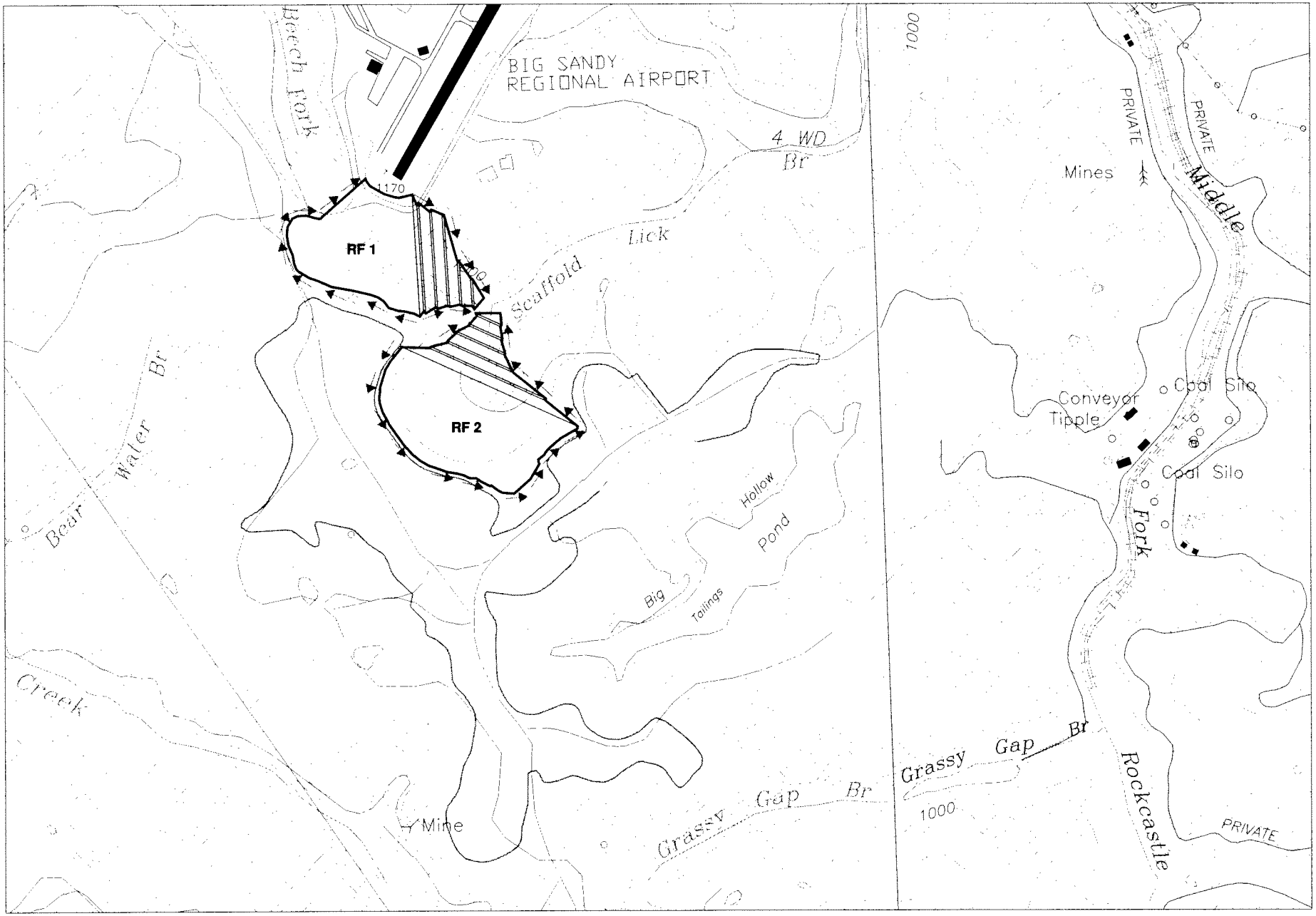
2. Chronic whole-effluent toxicity (WET) tests must be performed following the requirements of 40 CFR 136 (USEPA. October 2002. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. Fourth Edition, U.S. Environmental Protection Agency, Office of Water, Washington,

DC EPA/821/R–02/013; available on-line at http://www.epa.gov/waterscience/methods/wet/). The chronic WET tests must be performed using *Ceriodaphnia dubia* and *Pimephales promelas* and using a dilution series that includes 100 percent effluent and the In-stream Waste Concentration. The end points shall be reported as the inhibition concentration that affects 25 percent of the test organisms compared to the control (IC_{25}). Sampling shall be performed for five (5) consecutive quarters starting the quarter of permit issuance. In cases where the effluent discharge may be short in duration, it may be necessary to collect a high volume effluent sample and properly preserve it for use in the static-renewal test (Section 8.5.4 on page 32 of EPA's document entitled, "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (October 2002). All results must be reported to the Corps, EPA, and the Kentucky Division of Water within 30 days following sample collections. Any WET failure during the permit term will result in a requirement to do a toxicity reduction evaluation after retesting.

3. The permittee shall submit documentation to the Corps and EPA indicating all best management practices employed to minimize TDS and SC during the placement of fill material into waters of the United States and during the construction of the refuse fill. The initial documentation must be submitted within 30 days of site preparation and commencement of construction of the rock underdrain. After this initial submittal, the permittee shall submit documentation every 6 months unless the AMP has been triggered in Special Condition 1.

Enclosure 2

Staged Construction Diagrams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Conveyor
Tipple
Coal Silo
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Fork
Rockcastle
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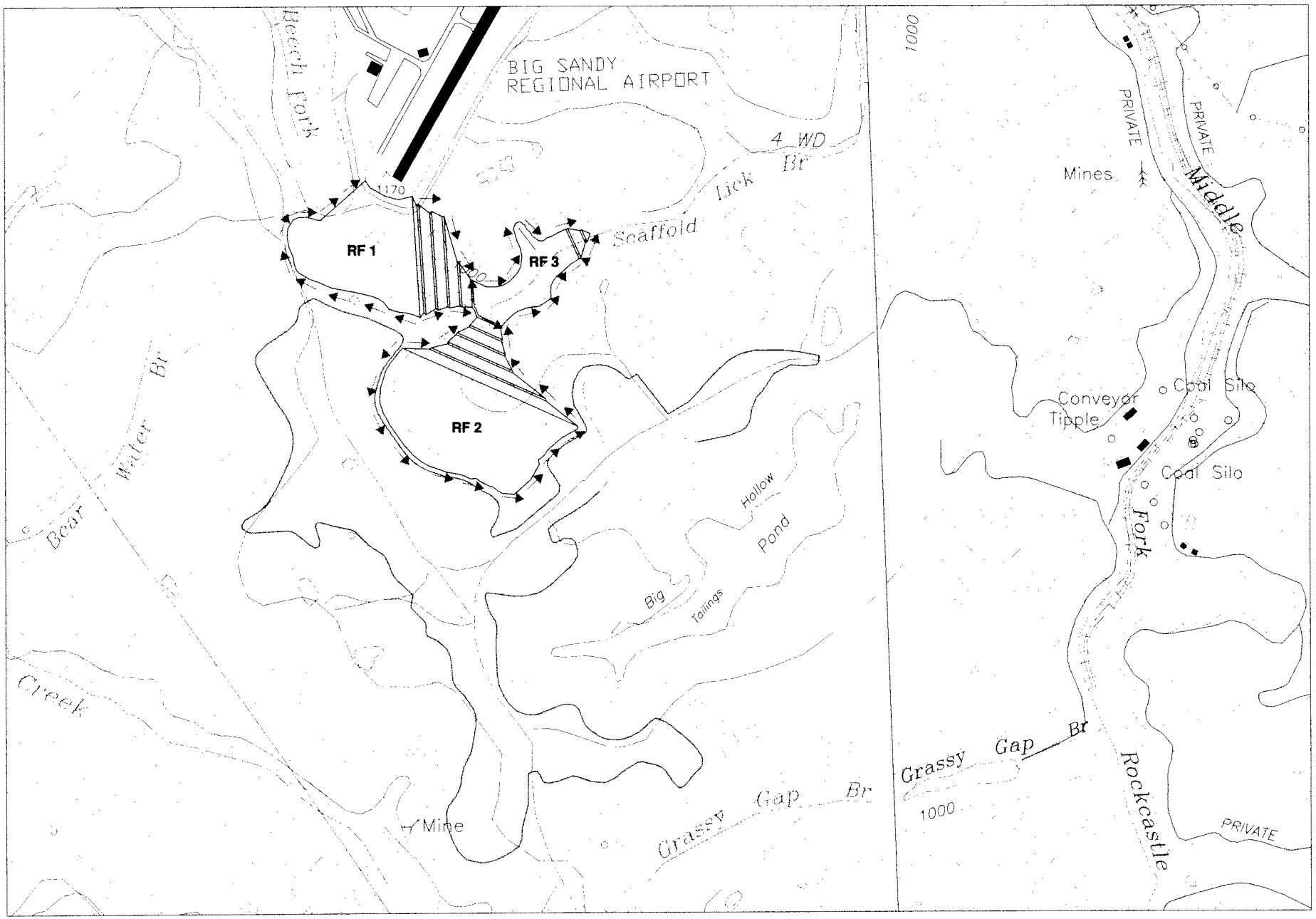
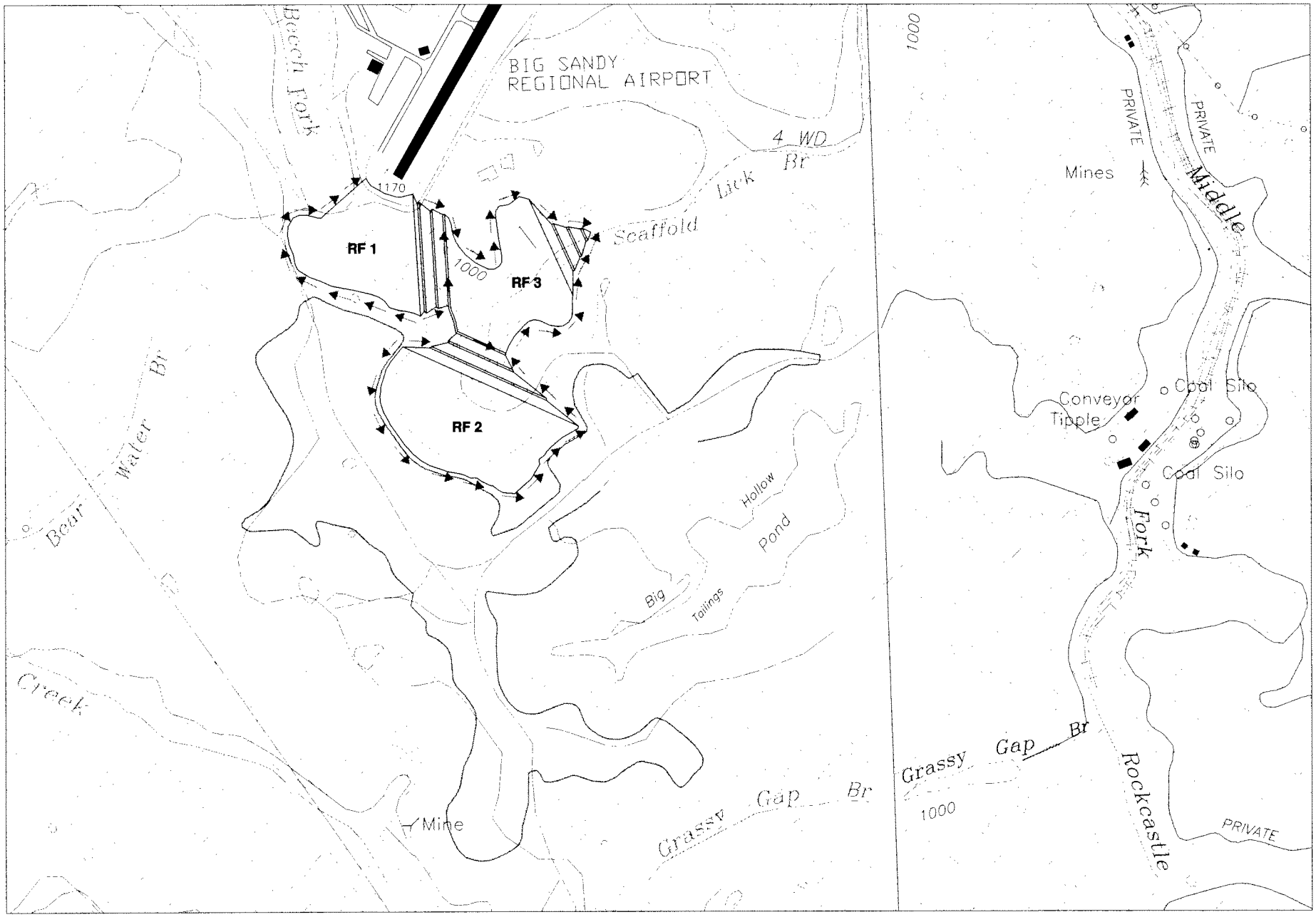
Czar Coal - Scaffold Lick Branch Coarse Refuse Storage Site (LRL-2008-0226, KDMP 880-8002 A4)

Stage 2

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Enclosure 3

Projected Adaptive Management Plan Implementation Timeline

Phase	**Action**	**Time allowed**	**Time since commencement of discharge of fill material**
Initial Monitoring		6 months	6 months
AMP Phase I	Submit AMP I	30 days after Initial Monitoring	7 months
AMP Phase I	Approve AMP I	not specified in Special Condition, estimate 45 days (1.5 months)	8.5 months
AMP Phase I	Implement AMP I	45 days after AMP I Approval	10 months
AMP Phase I	Monitor AMP I	6 months	16 months
AMP Phase II	Retain consultant	30 days after AMP I Monitoring	17 months
AMP Phase II	Develop and submit AMP II	90 days after Consultant Retained	20 months
AMP Phase II	Approve AMP II	not specified in Special Condition, estimate 45 days (1.5 months)	21.5 months
AMP Phase II	Implement AMP II	45 days after AMP II Approval	23 months
AMP Phase II	Monitor AMP II	6 months	29 months