



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
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ATLANTA, GEORGIA 30303-8960

SEP 28 2011

Ms. Sandy Gruzesky
Director, Division of Water
Kentucky Department for Environmental Protection
200 Fair Oaks Lane, Fourth Floor
Frankfort, Kentucky 40601

Subject: Notice of Specific Objections – 19 Draft NPDES Permits Listed in Enclosure 1

Dear Ms. Gruzesky:

On July 1, 2011, the Kentucky Division of Water (KDOW) transmitted to the U.S. Environmental Protection Agency 55 draft National Pollutant Discharge Elimination System (NPDES) permits and fact sheets for our review. The EPA has been reviewing these draft permits under the 90 day schedule identified in our Memorandum of Agreement (MOA) with Kentucky and the EPA's regulations at 40 Code of Federal Regulations (CFR) § 123.44(a). We issued a comment letter for one of the draft permits, Phoenix Resources (KY0109312), that identified our recommended changes to ensure consistency with Clean Water Act (CWA) requirements. For another of the draft permits, Beech Fork Processing, Inc. (KY0108339), we advised you in a letter dated August 16, 2011 that we had previously objected to a draft NPDES permit for that facility and, therefore, we would work with you to resolve our objection in accordance with 40 CFR § 123.44 and the MOA. We have now completed our review of the remaining 53 draft permits.

This letter also provides notice of our specific objection to 19 permits listed in Enclosure 1 in accordance with MOA Section IV.B and 40 CFR § 123.44(a). We have significant concerns that these permits will allow discharges that may cause significant water quality impacts due to the absence of effluent limits based upon an appropriate reasonable potential analysis necessary to demonstrate that the permitted discharges will not cause or contribute to a violation of the Commonwealth's narrative or numeric water quality standards. We will be providing additional comments on the remaining 34 permits in a separate letter. We are eager to work with you to address our concerns, particularly as we coordinate on future applications for coal mining-related discharges in Kentucky.

I want to emphasize that our review of the draft permits has been guided by our mutual goal of protecting public health and water quality consistent with the requirements of the CWA and reducing unnecessary duplication and delay in the permitting process and we recognize the important role that the CWA provides to states in administering NPDES programs. In 2008 the Commonwealth of Kentucky and the EPA Region 4 signed an updated NPDES MOA in which we agreed to maintain a high level of cooperation and coordination to ensure successful and effective administration of the NPDES program. Together we share an important responsibility to implement the CWA and we appreciate your efforts to work with us to address issues identified during our permit review.

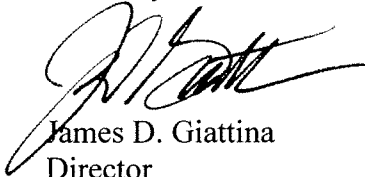
Our review of the 19 draft permits has identified general concerns regarding the quality and detail of information contained in the permit applications, fact sheets and draft permits submitted to the EPA and provided to the public in accordance with 40 CFR Part 124. As a general matter, the efficiency and effectiveness of our oversight and review is dependent upon the quality, consistency and detail of information provided to us. We are concerned that basic information regarding the nature, characteristics and potential effects of proposed discharges is missing from the permit applications making it difficult to assess compliance with CWA requirements. We understand that permit data are often difficult to collect and we are prepared to work immediately with you and the applicants to identify the discrepancies as well as the information that is most relevant and necessary for efficient and effective review of the proposed discharges and resolution of the draft permits.

In response to these concerns regarding the quality of information included with the permits submitted in July, I request that KDOW, in developing its response to these objections, confirm that the information presented in the applications, draft permits and fact sheets is complete and accurate. Where there is a discrepancy among the information supporting the NPDES permit application and information supporting a Surface Mining Control and Reclamation Act permit, or a CWA Section 404 permit, it is appropriate for KDOW to explain the reason for the discrepancy or require the applicant to update its application to reflect accurate project information. We are prepared to work with KDOW to identify existing discrepancies and other factual concerns in a timely manner so that these issues can be resolved as quickly as possible.

Enclosure 2 details the issues that underlie our objections to the 19 permits. As a general matter, we are concerned that a reasonable potential analysis required in accordance with 40 CFR § 122.44(d), is either inadequate or missing for each of the draft permits with respect to applicable narrative or numeric water quality standards. A reasonable potential analysis is necessary to determine whether the proposed discharges will cause, or have the reasonable potential to cause or contribute to, a violation of the Commonwealth's water quality standards. The draft permits also do not include effluent limits necessary to ensure that the proposed discharges will not cause or contribute to a violation of the Commonwealth's water quality standards, as required by Section 301(b)(1)(C) of the CWA and the EPA's regulations at 40 CFR §§ 122.4(a) and (d), and 122.44(d)(1). We are prepared to work with you immediately to begin addressing these deficiencies in order to ensure that final permit decisions can be made as quickly as possible.

Thank you again for your willingness to work with us to protect public health and water quality consistent with the requirements of the CWA. I look forward to following up with you to resolve these issues and to make timely decisions on these mining operations. If you have any questions, please call me at (404) 562-9345 or Mark Nuhfer of the Municipal and Industrial NPDES Section at (404) 562-9390.

Sincerely,



James D. Giattina
Director
Water Protection Division

Enclosures

cc: Permit Applicants

#	AI #	NPDES #	SMCRA #	Company
1	81614	KY0106682	897-5061	BDCC Holding Company
2	3428	KY0091847	897-8039	Blue Diamond Coal Company
3	3506	KY0092509	Multiple	Clintwood Elkhorn Mining Co.
4	107023	KY0109123	880-0157 A3	Czar Coal Corp
5	111103	KY0109321	880-0194	Czar Coal Corp
6	78571	KY0106445	836-8068	FCDC Coal, Inc.
7	3430	KY0046981	897-8048	Frasure Creek Mining, LLC
8	96732	KY0109100	836-5595	Laurel Mountain Resources
9	2654	KY0091910	897-0287	Leeco, Inc.
10	74997	KY0054810	Multiple	Martin Co. Coal Corp
11	14192	KY0105767	Multiple	Matt/Co, Inc.
12	107199	KY0108821	888-0091	Mine Rite Coal Company, Inc.
13	8752	KY0105651	860-0404	Nally & Hamilton Enterprises, Inc.
14	106751	KY0108421	826-0621	Robinson Coal Company, Inc.
15	15415	KY0108723	848-9026	Sandlick Coal Company, LLC
16	15379	KY0109738	898-0573	Sidney Coal Company, Inc.
17	108157	KY0108782	Multiple	Sidney Coal Company, Inc.
18	85262	KY0107140	898-0798 A1	Sidney Coal Company, Inc.
19	108158	KY0108774	898-0848	Sidney Coal Company, Inc.

Basis for Environmental Protection Agency Specific Objections:**1. The draft permits and fact sheets do not include an adequate reasonable potential analysis (RPA) for some pollutants and do not include appropriate effluent limits.**

According to 40 CFR § 122.44(d), National Pollutant Discharge Elimination System (NPDES) permits must contain limitations for all pollutants that have the reasonable potential to cause or contribute to violations of numeric or narrative water quality standards (WQS). An adequate RPA is necessary to determine if the receiving water body has sufficient assimilative capacity to ensure that the proposed discharges do not cause or contribute to violations of applicable numeric and narrative WQS. As explained below, the draft permits and facts sheets do not include an adequate RPA for coal mining-related pollutants with narrative and numeric WQS. The draft permits and fact sheets do not consider available information indicating that the proposed discharges do have the reasonable potential to cause or contribute to violations of applicable WQS, and the draft permits do not include appropriate effluent limits. As a result, discharges that would be authorized by the permits listed in Enclosure 1 may cause or contribute to violations of WQS.

A. The draft permits and facts sheets do not include an adequate RPA for pollutants with narrative WQS that are generally known to be present at significant levels in coal mine discharges.

NPDES regulations at 40 CFR § 122.44(d)(1)(vi) require NPDES permits to contain provisions implementing narrative WQS, and the RPA that must be completed for numeric WQS must also be completed for narrative standards.¹ The draft permits and fact sheets do not include an RPA for pollutants with narrative WQS such as sulfate, conductivity or total dissolved solids (TDS) to ensure that the proposed discharges would not cause or contribute to a WQS excursion. The fact sheets state that “in order to determine if reasonable potential exists [for conductivity and TDS], the baseline biological conditions of the intended receiving streams are compared to the biological conditions of the receiving streams during active mining... If the annual score(s) are lower than the baseline score but within the baseline category, then reasonable potential may exist. If the annual score(s) indicate the receiving water has declined in category then reasonable potential has been demonstrated.” KDOW proposes to conduct the required RPA during the permit term after it receives the results of the required biological monitoring. This approach potentially allows water quality degradation during the period between the scheduled annual biological assessments.

While additional data on water quality is always welcome, this approach does not consider available, valid and representative data showing that the proposed discharges have the reasonable potential to cause or contribute to violations of WQS. In addition, for some of the draft permits and fact sheets, Kentucky Division of Water (KDOW) did not evaluate whether

¹ Kentucky’s WQS include narrative standards for the protection of aquatic life, conductivity, and total dissolved solids. “Total dissolved solids or specific conductance shall not be changed to the extent that the indigenous aquatic community is adversely affected.” 401 Kentucky Administrative Regulations (KAR) 10:031, Section 4(1)(f); and “Surface waters shall not be aesthetically or otherwise degraded by substances that ... injure, are chronically or acutely toxic to or produce adverse physiological or behavioral responses in humans, animals, fish and other aquatic life” 401 KAR 10:031, Section 2. In addition, Kentucky has narrative standards for TSS and settleable solids. See 401 KAR 10:031(4)(1)(g) and (h); (g) “Total suspended solids. Total suspended solids shall not be changed to the extent that the indigenous aquatic community is adversely affected;” (h) “Settleable solids. The addition of settleable solids that may alter the stream bottom so as to adversely affect productive aquatic communities is prohibited.”

the discharges that would be authorized under those permits have the reasonable potential to contribute to the existing impairments. Of the 53 permits currently under review, 24 discharge to receiving water bodies identified as impaired for coal mining related pollutants according to the 2008 or draft 2010 Clean Water Act (CWA) § 303(d) list. The impairments are for a number of pollutants with narrative WQS: conductivity, sedimentation/siltation (seattleable solids and total suspended solids), sulfate, and TDS.

Given the existence of information indicating that reasonable potential exists,² the proposal to conduct the RPA during the permit term, and not prior to authorization of discharge, is inconsistent with the CWA and its implementing regulations. These regulations require that the permits contain water quality-based effluent limits (WQBELs) for all discharges that have reasonable potential to cause or contribute to a violation of WQS at the time of permit issuance (40 CFR § 122.44(d)(1)(iii, iv, vi)).

B. The draft permits and fact sheets do not include an adequate RPA for pollutants with numeric WQS.

The draft permits and fact sheets do not include an adequate RPA for pollutants with numeric WQS (such as metals) as required by 40 CFR § 122.44(d)(1)(i, ii, iii). The fact sheets state that “the permittee was unable to submit complete and acceptable data prior to public notice” for the effluent and in-stream levels and “representative outfalls were proposed to be monitored to provide data to perform the RPA.” In some cases, the projects have existing discharges that could provide such data. Alternatively the applications could have been determined to be incomplete and the applicant could have been required to submit the data to appropriately characterize the effluent. In other cases, where projects do not have existing discharges from which to obtain data, similar projects and information from relevant studies could have been used as representative data. Furthermore, in some permits, representative outfalls and in-stream monitoring points were not identified, which results in effluent limitations and monitoring requirements that only apply to undefined representative outfalls.³ The draft permits and facts sheets are based on incomplete applications and do not include effluent data and information from the projects and/or from other similar projects. Conducting the RPA during the permit term, and not prior to authorization of discharge, does not comply with the CWA and its implementing regulations.

The draft permits and facts sheets also do not adequately characterize the frequency and duration of discharges in order to conduct an adequate RPA. Not all of the draft permits and fact sheets include available site-specific data to characterize the effluent flow frequency and

² A 2004 Kentucky Department for Environmental Protection, Division of Water, Water Quality Branch study, “Effects of Surface Mining and Residential Land Use on Headwater Stream Biotic Integrity in the Eastern Kentucky Coalfield Region” found that the wholesale loss of mayflies at mined sites indicated that these organisms are especially sensitive to coal mine drainage and dissolved solids emanating from hollow fills are a primary cause of biological impairment because of their severe impact to mayflies and other sensitive taxa. A 2008 published study, “Downstream effects of mountaintop coal mining: comparing biological conditions using family- and genus-level macroinvertebrate bioassessment tools” by Pond, et al. found evidence indicating that mining activities have subtle to severe impacts on aquatic life and the biological conditions of a stream at conductivity levels of 500 µS/cm. A final EPA report (2011), “The Effects of Mountaintop Mines and Valley Fills on Aquatic Ecosystems of the Central Appalachian Coalfields,” found effects that include resource loss, water quality impairment, and adverse effects on aquatic resources. Another final report by EPA (2011), “A Field-based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams” concludes that 5% of native macroinvertebrate genera are extirpated where conductivity levels reached 300 µS/cm.

³ The fact sheets for these draft permits state that “the permittee did not submit a QAPP or representative outfall selection prior to this application. Therefore the permittee will be required to submit to DOW a QAPP within thirty (30) days of issuance of this permit. This QAPP must be found to be acceptable by DOW within ninety (90) days of permit issuance. DOW will reopen the permit as a minor modification to add representative outfalls and instream monitoring points at that time.

duration such as existing discharge monitoring reports, surface water monitoring reports, the CWA § 404 application, information about the watershed size draining to specific outfalls that is contained in the Surface Mining Control Reclamation Act (SMCRA) application, and available information about the in-stream flow regime.⁴ For example, where available information indicates that a project's in-stream sediment pond is within an intermittent or perennial stream segment, or the scientific literature shows that the drainage area of the pond is well within the regionally documented intermittent or perennial flow regime, the in-stream pond is likely to flow intermittently at a minimum. Based on the foregoing, a more detailed analysis is necessary to support determinations that the discharges authorized under the permits will not cause or contribute to exceedances of acute or chronic WQS.

In some cases the projects have existing discharges, and applicants should have submitted the required data to appropriately characterize the frequency of discharge. Instead, the fact sheets state that "discharges from the outfalls covered by this permit only occur during precipitation events." This statement is not supported by data regarding frequency or duration of discharge, and does not ensure protection of chronic WQS that would apply to any continuous discharge or any intermittent discharge that occurs frequently enough to have reasonable potential to exceed a chronic WQS.⁵ Due to the applicants' failure to submit "complete and acceptable" effluent data and the assumptions that the discharges are precipitation-driven, the permits listed in Appendix A contain maximum daily effluent limits for all metals based on an application of acute WQS only. The effluent limits within the permit do not negate the fact that an appropriate RPA must be conducted for both acute and chronic WQS, and the permit must include effluent limits necessary to meet acute and chronic WQS based on the results of the RPA before permit issuance.

2. Additional effluent limits are necessary to ensure that discharges do not cause or contribute to violations of WQS.

NPDES permits must contain effluent limitations for all pollutants that have the reasonable potential for the discharge to cause or contribute to violations of numeric or narrative WQS according to 40

⁴ Available scientific literature indicates that even small watersheds in central Appalachia can produce intermittent or perennial flow. A 2003 published study by Paybins, "Flow origin, drainage area, and hydrologic characteristics for headwater streams in the mountaintop coal-mining region of southern West Virginia," found that the median watershed size for intermittent streams was 14.5 acres and the median for perennially flowing streams was 40.1 acres. A 2005 published study by Svec, et al., "Defining perennial, intermittent, and ephemeral channels in Eastern Kentucky: application to forestry best management practices," monitored stream flow in 23 headwater catchments throughout the eastern Kentucky coal field region from 2000 to 2001. The flow duration in all catchments exceeded 50% of the period of record, indicative of at least intermittent stream flow in all catchments, including six watersheds draining less than 10 acres. Perennial stream flow was documented in watersheds as small as 32.2 acres. Another published study in 2008, "Physical indicators of hydrologic permanence in forested headwater streams" by Fritz and others categorized channel flow conditions in forested headwater streams located mostly, but not exclusively, in the central Appalachian states. The authors found that intermittent stream flow in central Appalachia was generated by a mean drainage area of approximately 126 acres and an average drainage area of approximately 210 acres generated perennial stream flow. Another study commissioned by the National Mining Association in 2011, "Variability of benthic invertebrate communities of headwater streams in southern West Virginia: final report to National Mining Association" by GEI, found highly diverse aquatic communities in West Virginia headwaters that drained between 12 and 25 acres with wetted stream widths of only one foot wide.

⁵ For the following examples, either the information in the CWA § 404 application, the discharge monitoring reports (DMRs), or the watershed size provides evidence to support a finding that these in-stream ponds have a continuous effluent flow frequency such that chronic WQS must apply. For Phoenix Resources (KY0109312), information gathered to support the CWA § 404 application places the in-stream pond in a intermittent stream section. The DMRs are limited but do indicate that the in-stream pond had measurable flow every two weeks from January to March of 2011. The SMCRA application shows that the total drainage area of the in-stream pond is 88 acres. As another example, the DMRs for outfall 001 from January 2007 to June 2011 at Czar Coal (KY0109123) indicate that discharge has occurred every two weeks since January 2007 (except for 3 month period in 2008). Based on the DMRs, the average flow rate from outfall 001 in 2011 is approximately 120,000 gallons per day. The watershed size for pond 001 is 597 acres according to the SMCRA application. Finally, the DMRs for outfall 008 associated with Clintwood Elkhorn (KY0092509) show that it has discharged every two weeks from January 2007 until June 2011. The watershed size for pond 008 is 567 acres according to the SMCRA application. For permits KY0109123 and KY0092509, the discharges that occurred every two weeks for over 4 years is highly unlikely to be the result of discharge occurring "during precipitation events."

CFR § 122.44(d). To address these objections, KDOW must provide revised permits and fact sheets that characterize the effluent and the background conditions in the receiving water bodies for these permits using existing data (including where necessary representative data from other similar projects, or require additional data from the applicants for existing projects); include an adequate RPA; and include WQBELs that are as stringent as necessary to meet all narrative and numeric WQSs based on the results of the RPA.

We would include in the permits effluent limits necessary to meet WQS based on the results of the RPAs. In performing the RPAs, the Environmental Protection Agency would consider relevant and available information, including the studies cited above in footnote 2 and 4, and available data (including data from discharge monitoring reports, surface water monitoring reports, the CWA § 404 permit applications, the SMCRA permit applications, and representative data from other sites). As noted in footnote 2, relevant studies indicate that adverse impacts occur to the aquatic community at conductivity levels of 300 $\mu\text{S}/\text{cm}$ and substantial aquatic life effects have already occurred when conductivity reaches 500 $\mu\text{S}/\text{cm}$. If the EPA were issuing these permits, we would include effluent limits in the permits to ensure that all discharges from these projects do not exceed a conductivity level of 300 $\mu\text{S}/\text{cm}$, unless site-specific information suggests that an alternate WQBEL is appropriate.⁶

In addition to chemical-specific limits to meet a narrative WQS, 40 CFR § 122.44(d)(1)(v) specifies that, when a discharge has reasonable potential to cause or contribute to a violation of a narrative criterion within an applicable State WQS, “the permit must contain effluent limits for whole effluent toxicity (WET),” unless the permitting authority demonstrates in the fact sheet or statement of basis of the NPDES permit “that chemical-specific limits for the effluent are sufficient to attain and maintain applicable numeric and narrative State water quality standards.” Absent such a demonstration, the permits must be revised to include the appropriate WET limits. For outfalls that discharge greater than 96 hours in duration⁷, the permits must be revised to include chronic WET limits, and limits for other coal-mining pollutants that may be discharged at levels exceeding chronic WQS.

Additional Comments and Recommendations

1. Recommendations regarding the reliability of permitting information.

Our review of the 53 permits has raised questions about the accuracy of information in the applications, draft permits and fact sheets. The uncertainty regarding the accuracy of permitting information makes it difficult, if not impossible, to confirm that the permits contain effluent limits as stringent as necessary to meet state water quality standards. For example, if permit information does not reliably characterize the location, type or number of outfalls, the frequency or duration of discharge and the existing water quality in receiving water bodies, it is not possible to perform an adequate reasonable potential analysis. Our review of the 53 draft permits revealed a sufficiently pervasive pattern of inconsistencies, discrepancies and questions regarding permit information to

⁶ Application of narrative WQS in the context of a specific permit is a case-by-case determination taking into account the specific circumstances of each permit. Conductivity levels outside the range of 300 – 500 $\mu\text{S}/\text{cm}$ may be consistent with meeting applicable narrative WQS in some water bodies, depending on their characteristics. Different conductivity levels might be appropriate for waters that are different from those on which the EPA reports were based, such as those with dissimilar ionic mixtures or aquatic life communities. Whenever limits for conductivity are set at numeric values above 300 – 500 $\mu\text{S}/\text{cm}$, site-specific data and high-quality scientific information should be used in order to ensure that they fully protect applicable aquatic life uses.

⁷ This duration is consistent with the way that the EPA expresses numeric criteria.

lead us to recommend that KDOW review all of the permitting information for accuracy and completeness as it develops its response to the specific objections. We recommend that KDOW conduct a review of information in the applications, draft permits and fact sheets to ensure that its permitting decisions, and review by the public and the EPA, are based on accurate permitting information. This may involve informing permit applicants of our concerns regarding the accuracy of permit information and requiring applicants to review the information in applications and certify its accuracy or, if necessary, submit revised applications with updated information, certified in accordance with 40 CFR § 122.22. We recommend that KDOW also ensure that the application information is reconciled with information in the draft permits and fact sheets, and that adequate RPAs are conducted based on this information.

2. Recommendation for supplemental permit conditions.

In addition to the foregoing basis for our specific objections to the permits, we recommend that if KDOW continues to use the proposed supplemental permit conditions (best management practices (BMPs) and biological-based limits), the conditions be revised in order to ensure that the permits are protective of Kentucky WQS and consistent with the CWA. While the absence of such conditions would not be a basis for the EPA's specific objection, revised limits would provide greater assurance that water quality will be protected and that degradation resulting from coal mine discharges will be promptly identified and addressed.

We recommend that BMP-based effluent limits as authorized by 122.44(k)(3) should include clear, specific and enforceable measures to ensure that the BMPs are performing as expected. We recommend that action levels be set at levels sufficient to identify problems and require that adaptive action be taken promptly if it appears that WQS may be exceeded. An appropriate action level to protect narrative WQS would be an effluent conductivity level of 300 $\mu\text{S}/\text{cm}$, unless site-specific information suggests that an alternate action level is appropriate. When such action levels are exceeded, we recommend that the permit require implementation of an enforceable adaptive management plan to better control discharges before they degrade water quality.

We also recommend revisions to the biological-based limits that are applied in-stream to ensure they are as stringent as necessary to achieve Kentucky's WQS in accordance with 40 CFR § 122.4(d) and CWA § 301(b)(1)(C). The permit requirements for the biological-based limits should be designed to ensure that the effects from existing sources can be quantified and distinguished from the effects from other permitted discharges and baseline stream conditions. The permit conditions should include measurable and enforceable thresholds representing a violation of the permit that places the responsibility on the permittee to take action and avoid long-term noncompliance with the permit and WQS. The biological-based limits should be consistent with applicable WQS. As currently structured in the draft permits, the biological limits only require maintenance (no worsening) of an existing degraded condition. A biological-based limit that maintains and contributes to an existing impairment is not protective of applicable WQS. For example, if a headwater stream in the Eastern Kentucky coal region has been identified as impaired on Kentucky's CWA § 303(d) list or by the project's baseline biological assessment, a macroinvertebrate biological index score of 72 (consistent with meeting applicable WQS) is the minimal acceptable future condition to ensure that the discharge will not cause or contribute to an exceedance of Kentucky's narrative standards.

To address our specific objections, KDOW should submit revised permits and fact sheets for these projects which address and meet the terms of these objections in accordance with the Memorandum of Agreement (MOA) Section III.B.6 and 40 CFR § 123.44(j). Please note that covering these facilities

under the Kentucky general permit will not satisfactorily address our specific objections. Within 90 days of the receipt of this letter, KDOW, or any interested person, may request that a public hearing be held on any of the specific objections in accordance with MOA Section IV.B.7 and 40 CFR § 123.44. For each of the permits subject to objection, if a public hearing is not requested and KDOW does not submit a proposed permit that has been revised to meet our specific objections within 90 days of receipt of this letter, exclusive authority to issue the permits passes to the EPA for one permit term in accordance with 40 CFR §123.44(h). Any request for a hearing on an objection and the procedures for resolving any objection shall be governed by 40 CFR § 123.44, as provided in MOA Section IV.B.7.