

EGL RESOURCES INC.
OIL SHALE RESEARCH, DEVELOPMENT AND DEMONSTRATION
Environmental Assessment

PUBLIC COMMENTS

Public Review and Comment on the Environmental Assessment

Following open houses in Rangely, Meeker, Rifle and Grand Junction, the EGL EA was prepared and the official public comment period opened upon publication of the draft document on July 27, 2006. The EA was available for public comment through September 1, 2006.

The BLM distributed a notification and inquiry via first-class mail to contacts on the mailing list, announcing the availability of the EA in various media formats. The mailing list includes federal, state, and local elected officials, interested members of the public, and property owners in and near the EGL Oil Shale RD&D tract. Availability of the EA was also announced by publishing notices in local newspapers.

The EA was mailed out to approximately 65 individuals, groups, and agencies. It was provided for public review by bound paper or CD-ROM format upon request, and posted for review or downloading on the project web site.

A total of 20 individuals, groups or agencies submitted comments by letter, fax and internet response. Table 1 summarizes the comments submissions to the BLM by types of commenters and numbers of each type of commenter who submitted comments. Seven individuals submitted comments, 5 state agencies, 2 Federal agencies, 2 municipal or city governments, 2 environmental groups and one business group. The proponent submitted comments as well. Most submissions contained more than one comment resulting in a total of 282 comments received on the EGL EA.

Table 2 lists each of the 20 letter submissions received. Each piece of correspondence was given an alpha designator often containing a portion of the name of the commenter. Individual comments within that single correspondence were then given unique identification numbers. Using this format anyone who submitted a comment letter can look up the comment letter code for their comment.

TABLE 1 COMMENTER CATEGORIES		
TYPE OF COMMENTER	NUMBER OF COMMENTERS	ORGANIZATION
Environmental Groups	2	Western Resource Advocates William and Flora Hewlett Foundation
Federal Agencies	2	United States Geological Survey White River National Forest
Individual	7	Tom McCreary Dr. Ronald Klusman Douglas Chadwick Brent Fryer Dr. Alan Watchman Glen Miller Robert Tobin
Industry	1	EGL Resources, Inc.
Business Groups	1	Club 20
Municipal or County Government	2	Town of Rangely Rio Blanco County
State Government	5	Colorado Air Pollution Control Division Colorado Division of Wildlife Colorado Division of Water Resources Colorado River Board of California Colorado Water Quality Control Board
Total	20	

**TABLE 2
KEY TO COMMENTER ABBREVIATIONS FOR EGL EA**

COMMENTER ABBREVIATION	COMMENTER	ORGANIZATION
APCD	Margie Perkins and Scott Patefield	Colorado Air Pollution Control Division
CDOW		Colorado Division of Wildlife
CDWR	Dick Wolfe	Colorado Division of Water Resources
Cha	Douglas Chadwick	Individual
CLUB20	Jim Evans	Club 20
CRBCA	Gerald Zimmerman	Colorado River Board of California
EGL	Wes Perry	EGL Resources, Inc.
Fry	Brent Fryer	Individual
Klu	Dr. Ronald Klusman	Individual/Emeritus Professor Colorado School of Mines
McC	Tom McCreary	Individual
Mil	Glen Miller	Individual
Ran	Jeff Devere	Town of Rangely
RBC	Mike Neumann	Rio Blanco County
Tobin	Robert Tobin	Individual
USGS	Paul von Guerard	United States Geological Survey
Wat	Dr. Alan Watchman	Individual
WilSta	Megan Williams and Victoria Stamper	William and Flora Hewlett Foundation
WQCD	Steven Gunderson	Colorado Water Quality Control Board
WRA	Robert (Bob) Randall	Western Resource Advocates
WRNF	Maribeth Gustafsen	White River National Forest

All comment letters were reviewed, and most comments fell within general topics or ‘themes’. Thirteen themes were identified that encompassed the majority of the comments. The themes, and the number of comments that were categorized within the themes, are listed in Table 3.

TABLE 3 SUMMARY OF COMMENTS BY THEME	
Theme	Number of Comments within each Theme
Air Quality	61
EA Edit	12
Groundwater	84
Mineral	6
NEPA Procedural	56
Reclamation/Restoration	2
Scope	3
Socioeconomics	8
Surface Water	24
Transportation/Access	5
Water Rights	6
Wildlife, T&E	1
Wildlife, Terrestrial	12
Miscellaneous/Other	2
Total	282

A few comments were considered miscellaneous and did not fit into any of the above mentioned themes. One requesting visual impacts be minimized by the use of directed lighting, and another with a non-specific opposition to oil shale.

GENERAL COMMENT RESPONSES TO ALL OF THE OIL SHALE RD&D EAs

During the BLM’s analysis of comments, the following general areas of concern, or comment themes, were identified.

- ❖ Air Quality
- ❖ Water
- ❖ Social and Economic Impacts
- ❖ Lease Terms
- ❖ Permits from state or local governments
- ❖ Environmental Impact Statement (EIS) Vs. Environmental Assessment (EA)
- ❖ Narrow statement of Purpose and Need
- ❖ Reasonable Range of Alternatives
- ❖ Preference Right Acreage
- ❖ Comments that are outside the scope of the RD&D EAs

General responses to these themes are below. Detailed response to comments can be found in the tables that follow the general responses.

Air Quality Impacts

Air quality modeling was completed for the Oil Shale RD&D projects to provide the BLM with adequate information relevant to issues raised during the initial scoping for the RD&D projects and to compile additional information on which to make an informed decision. The modeling chosen for the five RD&D projects (AERMOD) is appropriate for the scale and scope of the RD&D projects and has been extensively used in past assessments. Because of the nature of the research and development, some uncertainties were expected and the BLM consistently chose to use conservative estimates when uncertainties arose. In addition, mitigating measures identified in the subalternative were not completely accounted for in the air modeling. The result was an analysis that showed a potential cumulative visibility impacts. The process of addressing comments received during the 30 day public review period resulted in clarification of data and has allowed the BLM to refine the data input into the air quality model to the point that the models have been re-accomplished for the RD&D projects. The refinements include, not only accounting for mitigation measures not incorporated into the first model, but also adjusting estimated emissions. These refinements include both increases and decreases in estimated emissions, but the conclusion reached accurately portrays a more realistic scenario than the original model. Extensive monitoring, pollution prevention and permitting requirements further alleviate the possibility of any significant air quality impacts associated with the RD&D projects.

Water Impacts

Many comments addressed uncertainties in water impacts associated with the RD&D projects. BLM acknowledged that there are uncertainties associated with water quality and has undertaken extensive mitigation efforts to address those issues. The key to minimizing impacts so they remain insignificant is to implement the identified mitigation and to require a comprehensive water (ground water and surface water) monitoring and response plan. The BLM is committed to incorporating, not only the comments, but also the appropriate local, state and federal agencies, to the maximum extent possible in developing comprehensive monitoring and response plans. The coordination and collaboration on these plans would extend beyond the agencies and would include all three companies in order to provide meaningful data across all five projects that could accurately reflect the baseline, operational and post-operational conditions that accompany in-situ oil shale development. Involvement of technical experts among the agencies is the only way to incorporate the critical parameters into the monitoring plans, to develop data reporting requirements and to determine how data would be interpreted. To this end, the BLM has begun coordination by holding monthly meetings in its Colorado State Office with federal, state and local agencies on progress in the RD&D effort. These meetings will be critical in identifying permit requirements in the near term and continue to determine the monitoring needs described above.

As with air quality, extensive monitoring, pollution prevention and permitting requirements further alleviate the possibility of any significant water quality impacts associated with the RD&D projects.

Social and Economic Impacts

While the oil shale RD&D projects will progress on a staggered schedule and are of relatively small scale, they have the potential to further strain the social and economic structure in the local area over the next ten years. It has been noted by local officials that oil shale companies that are already engaged in energy development in Northwestern Colorado, specifically Chevron and Shell, have maintained a positive relationship with local governments. Concerns voiced over social and economic impacts include concerns over employee housing, road maintenance and improvement, law enforcement and emergency response. Some suggestions brought forward to mitigate these concerns are not within the authority of the BLM to guarantee or to include in a lease as a condition of approval. The BLM will continue to facilitate to the maximum extent possible collaboration and communication between local governments and the companies operating within their jurisdictions.

The greatest potential for strain on the local housing markets and roads is likely to occur from the Shell RD&D project which anticipates the largest influx of temporary workers. In comments submitted to the BLM, Shell is planning to develop temporary quarters to accommodate a large majority of the workers Shell anticipates needing during the construction and operation stages of its RD&D projects.

Lease Terms

Standard Lease Terms have been developed to provide the lessee the right to use the leased land as needed to explore, drill, mine, extract, remove, beneficiate, process, and dispose of the oil shale and products of oil shale located under the leased lands. Standard Lease Terms provide for reasonable measures to minimize adverse impacts to surface and subsurface resources. These include, but are not limited to, modifications to the siting or design of facilities, schedule of operations, and specifications of interim and final reclamation measures. Federal environmental protection laws such as the Clean Water Act, Clean Air Act, Endangered Species Act, and Historic Preservation Act, will be applied to all lands and operations and are also included in the standard lease terms.

The BLM's planning process requires these oil shale RD&D projects to be evaluated to determine if oil shale development would conflict with the protection or management of other resources or public land uses. The RD&D EAs analyzed the proposed RD&D projects and identified mitigating measures to reduce the potential for impacts to resources or other public land uses. These comprehensive mitigation measures will be added as special stipulations to the leases in addition to Standard Lease Terms. BLM determined the special stipulations that will ensure oil shale RD&D operations are conducted in a manner that minimizes adverse impacts to the land, air, water, cultural, biological, and visual elements of the environment, as well as to other land uses or users.

Permits from state or local governments

It was asserted that the preliminary Environmental Assessments (EAs) for Chevron and Shell's RD&D proposals that the BLM be allowed to waive the requirement to obtain *right-of-way* permits from state or local governments. The BLM is not asserting the right to waive permitting requirements for any other element of the project, including critical elements such as air quality, hazardous waste disposal, and water quality. Because the language that caused this confusion was taken from a form the BLM has previously used for issuance of right-of-way grants (Form 2800-14) and is not necessary to the assessment, it has been stricken from the revised EAs.

While the BLM is not authorized to either implement or waive state or local laws, we do, in fact, require our lessees to comply with them under virtually all circumstances. Because some of the technologies in the RD&D proposals are so new, public involvement and comment are especially important to producing the strongest possible analysis of their effects. By releasing the EAs in preliminary form, the BLM invited the public and state and local authorities to identify where and how the analysis could be strengthened before final decisions are made on RD&D leasing.

The BLM holds monthly meetings in its Colorado State Office with federal, state and local agencies on progress in the RD&D effort. In addition, close collaboration with state and local governments is continuing as the BLM prepares a Programmatic Environmental Impact Statement for commercial oil shale leasing. The table at the end of the Comment Responses indicates typical permits that are required.

Environmental Impact Statement (EIS) Vs. Environmental Assessment (EA)

Some commenters state that there is a possibility of unknown impacts from the projects and for that reason the BLM should develop an EIS. Commenters may not adequately consider that what Congress mandated, and what the BLM is implementing, is leasing for research and development of technologies to recover liquid fuels from oil shale. If all the impacts from those technologies were known or knowable, there would be no need for research and development. In Section 369(a) of the Energy Policy Act of 2005 Congress required the BLM to lease Federal oil shale properties for the purpose of experimentation with promising technologies. The essence of experimentation is the possibility that previously unknown results might occur.

BLM has tried to anticipate, minimize, and monitor to the extent possible the likely impacts of the operations proposed for oil shale RD&D projects. Federal agencies may conduct experiments with new technologies pursuant to an EA when there are sufficient monitoring programs and plans to mitigate adverse impacts if any are discovered. An EA remains the appropriate NEPA documentation when measures are taken to mitigate adverse impacts, even if they cannot completely compensate for the project's effects. For the RD&D projects in Colorado, the areal extent has been limited to 800 acres maximum and requiring extensive monitoring and mitigation programs. Furthermore it is entirely appropriate for an agency to assume that companies will comply with permitting standards, regarding permits which the project must have in order to go forward. Although the BLM can not guarantee that there will be no adverse impacts, the measures imposed on the RD&D projects will limit the effects so as to be insignificant.

Other comments suggested that the BLM must prepare an Environmental Impact Statement for a number of reasons.

- *An EIS would facilitate long-term planning.* BLM is in the process of preparing a programmatic EIS for commercial leasing of Federal oil shale and tar sands. That document will facilitate long-term planning regarding Federal oil shale lands and their surrounding communities.
- *Public involvement requires an EIS.* BLM exceeded the public involvement requirements for an EA. It held public meetings, circulated drafts, and took comments from the public. Commenters have not explained what purpose additional public involvement would serve if BLM were to prepare an EIS.
- *The BLM should complete a single EIS for the five oil shale RD&D projects.* The monitoring, mitigation and permitting requirements for the RD&D projects will reduce any adverse impacts to the human environment to an insignificant level. Furthermore, the EAs address the cumulative impacts for all of the RD&D projects under consideration. Each RD&D project is limited to 160 acres, which is an insignificant portion of the resources contained on or within the lands where Federal oil shale could be extracted, and even of the BLM administrative unit. Each RD&D project, moreover would employ a different new technology, and thus are not the same project and would likely have fewer cumulative impacts than the same technology employed simultaneously at five different sites.

Narrow statement of Purpose and Need

Some commenters argue the RD&D EAs utilized an impermissibly narrow statement of Purpose and Need. BLM derived the statement of Purpose and Need from the mandate in section 369(a) of the Energy Policy Act of 2005 to lease Federal oil shale for research and development, and the willingness of Shell, Chevron and EGL to test promising technology at the scale of 160 acres. Other technologies proposed by other applicants were considered for other areas, but those proposals and the decisions about which to approve for RD&D projects are not part of the present EA. The Purpose and Need is not derived exclusively from the Companies' interests. Commenters failed to disclose a Purpose and Need statement that would meet the Congressional mandate in light of the Companies proposal to test technology.

Reasonable Range of Alternatives

Some comments assert that the EAs failed to consider enough alternatives. Documentation prepared under NEPA need only evaluate alternatives that would satisfy the needs and purposes of the project, even if there is only one alternative that satisfies those needs purposes. The commenters proposed no other alternative which would meet the needs and purposes of the project. The BLM has found no additional, distinct satisfactory alternative to evaluate in detail.

Preference Right Acreage

Some comments assert that the Preference Right Acreage (PRA) leasing is 'reasonably foreseeable' and should be analyzed at this time. As stated in the lease document and elsewhere, if and when any of the Companies are granted that preference right, an EIS will be completed before issuance of the lease to that additional acreage. The development of the preference acres

is a mere possibility, contingent upon a number of factors, including a showing of commercially feasible and environmentally sound extraction technology. The present lease of 160 acre parcels does not irretrievably commit the resources within the PRA.

Comments that are outside the scope of the RD&D EAs

Comments pertaining to the Programmatic Environmental Impact Statement (PEIS) for commercial oil shale leasing and comments on the Research Development and Demonstration nomination review process are not within the scope of the RD&D EAs. Each of these programs is (or was) accompanied by a separate process and included ample opportunities for public involvement and comment.

The PEIS will prospectively evaluate the impacts of commercial-scale development of Federal oil shale. The present EAs assess the impacts of the RD&D 160-acre projects. The present EAs do not depend upon the programmatic EIS for the answers to any issue properly addressed in the EAs.

Comments received on the EGL EA that were very similar were grouped together so that a more comprehensive response could be drafted. Some comments were unique in topic and did not lend themselves to grouping, and remained as individual comments. Each was then given a theme-based response designator provided in the left column of Table 4. Each commenter can identify which response applies to his/her individual comment, as individual comments comprising the group are also provided. To find the individual comment prior to grouping, see Table 5.

**TABLE 4 - Air
RESPONSES TO COMMENTS FOR AIR**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
Air-1	WilSta 1 (all parts), APCD-16, WRA-1h	<p><u>Emission Inventory:</u> Emission Inventory deficiencies identified associated with boiler, road traffic, fugitive emission from the retort process, flares.</p>	<p>In general, assumptions used to estimate the emissions have been refined and additional emission sources have been provided. Boiler operations, H₂S concentrations, flaring, and road dust assumptions presented in the July 27, 2006 EA were re-evaluated to better represent the reasonably foreseeable operational scenarios and emission estimates. The original analysis was based on flaring all of the produced gas for the duration of operations, and assumed that the produced gas would contain up to 1% H₂S. This scenario, although very conservative, (i.e. worst case scenario) was determined to be very unlikely, and revised modeling results are presented in Tables 5 and 31.</p> <p>Emission inventories have been revised to address the boiler emissions. Specifically, VOC, SO_x and PM emission estimates were added for the natural gas boiler. In addition, emission estimates were also added for firing the boiler on No. 6 Fuel Oil. Since the H₂S concentrations are unknown at this time, additional near-field modeling was conducted to determine the percent of H₂S present in the produced gas that would require mitigation to ensure the PSD Class II increment is met. These concentrations were determined to be 0.4% (vol) in gas and 0.8% (wt) in oil.</p> <p>All pumps, fans, and water treatment equipment were not included in the emission inventory because they are electric. A single 25 kW emergency generator was identified but was not analyzed because it would only be needed under unforeseen upset conditions. Storage tanks were included in the inventory but had minimal VOC emissions.</p>
Air-2	WilSta-1E, RBC-5, Fry-1,	<p><u>Boiler Operation/Flaring</u> Questioned the emission estimates for flaring and the operational assumptions used to determine</p>	<p>The air quality analysis provided in the July 27, 2006 EA was based on the assumption that all of the produced gas would be flared for the duration of operations and assumed that the</p>

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	APCD-12, WRA-1h,	emissions associated with burning produced gas, natural gas, and produced oil. Requested that emissions associated with flaring for the entire year be quantified. Asked if the air quality analysis include flaring if the gas can't be utilized. Did air analysis look at H2S emissions being flared and burned in the boiler? The SO2 emissions seem disproportionately high in relation to the NOx and CO emissions.	<p>produced gas would contain up to 1% H₂S.</p> <p>The emission inventory and the assumptions applied to boiler and flare operation have been revisited. Boiler operations, H₂S concentrations, and flaring assumptions presented in the July 27, 2006 EA were re-evaluated to better represent the reasonably foreseeable operational scenarios and emission estimates. The EA has been clarified to better define the operational assumptions for the boiler and flare, when each fuel would be burned, and which scenarios would give the highest estimated emissions. Produced gas will be burned in the boiler after the first year. During the first year, when little gas is being produced, the composition of the gas will be evaluated to determine if treatment will be necessary to use the gas as fuel in the boiler and/or if mitigation or other controls will be required to address the emissions. During the first year, the produced gas would be flared. Treatment, controls and mitigation measures may be applied to the gas stream if the gas requires CO₂ or O₂ removal, sulfur removal or recovery, or if the emissions require scrubbing. Revised modeling results are presented in Tables 5 and 31. Finally, the enforcement of actual air pollutant emissions will be addressed during the permitting process with the CDPHE-APCD. In addition, BLM will not approve any activity which does not comply with all applicable local, state and federal air quality regulations.</p>
Air-3	WilSta-1D, RBC-6, Klu-3	It was requested that fugitive VOC, HAP and CO2 emissions be estimated for the retort process. Other commenters asked if retort gas used to fire the boiler will require treatment and that the amount and composition of produced gas should be	Based on limited available information, potential air pollutant emissions were quantified for the impact assessment. However, one of the objectives of the RD& D project is to determine the characteristics of the retort gas including the composition and amount of gas produced. Hence, it is currently unknown if the

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		quantified during RD&D.	<p>retort gas will require treatment.</p> <p>Monitoring plans to detect and mitigate any potential for release of CO₂, and other harmful constituents (including VOC, H₂S, and HAPs), are being developed and would be implemented to gather baseline data and to monitor the process for the duration of the RD&D project. All monitoring plans will be approved by the BLM prior to implementation.</p>
Air-4	WilSta2, WilSta-8, APCD-4, APCD-6, APCD-8, APCD-9, WRA-7i, WRA-7g, WRNF-1, WRA-8b	<p><u>Cumulative Analysis:</u> The cumulative modeling analysis must include all sources that impact Class I areas. The cumulative impacts analysis should have looked at a greater set of Class I areas. Coal-fired power plants were not modeled in the cumulative impacts analysis even when located 200-300 km and could impact Class I areas. Proposed coal-fired power plants (two mentioned) should also be included to determine impacts on Class I areas. The sources should also have included projected. Cumulative visibility impacts worse than predicted because the evaluation did not include all existing and reasonably foreseeable air emission sources such as emissions from the oil and gas development.</p> <p>A complete (NAAQS/CAAQS and PSD Increment) cumulative analysis was not completed for the Oil Shale RD&D Project. Table 31 impacts do not include existing sources beyond the five Oil Shale RD&D projects. Additionally, cumulative impacts should be compared to both the NAAQS/CAAQS</p>	<p>A cumulative air quality impact assessment was presented in Table 31 based on potential operational emissions from all five oil shale RD&D projects, as well as the current ExxonMobil Piceance Creek Development Project. Maximum predicted cumulative far-field impacts were presented for receptors locations within the Piceance Basin, Dinosaur National Monument, and the Flat Tops Wilderness Area, and compared to applicable NAAQS/CAAQS and PSD Increments as NEPA thresholds of significance. Table 31 clearly demonstrated that applicable PSD Class I increments would not be exceeded from the cumulative emission sources analyzed.</p> <p>As appropriate in a NEPA analysis, BLM compares potential air quality impacts to applicable PSD increments as a “threshold of significance.” However, the actual determination of whether or not an emission source violates a specific PSD increment is a legal determination which must be made based upon a "regulatory PSD increment consumption analysis." As noted earlier, based on a revised emission inventory, the near-field model was rerun and the analysis indicates that PSD Class II increments will not be exceeded.</p>

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		and applicable PSD increments.	In addition, the background estimate for air quality of Piceance Basin was provided by the CDPHE-APCD, and constitutes the best available data to establish regional background air quality conditions (including other regional operating emission sources.) In addition, BLM is planning to conduct a regional air quality impact assessment to analyze potential amendments to its White River Resource Management Plan, using CALPUFF or another more intensive but less conservative model.
Air-5	WilSta-8, WilSta-15, APCD-7, APCD-8, APCD-9, WRNF-5, WRA-7h WRNF-2	<p><u>Visibility:</u> Potential cumulative visibility impacts exceeding 1.0 deciview change between 13 and 20 days per year at Flat Tops Wilderness Area constitute a significant adverse impact. Winter days, precipitation days or meteorology are not sufficient reasons to remove the days. The magnitude, frequency and duration of predicted changes should be reported.</p> <p>Request statements be removed from the EA that are resource value judgments regarding visibility impacts would not be important.</p> <p>The cumulative visibility impacts at Flat Tops Wilderness Area will be significant. Low visitation months and visibility impairment provide for a less stringent visibility state or federal standard. Federal Managers and US Forest Service consider a 0.5 dv change to be a limit of acceptance.</p> <p>Failed to provide or evaluate mitigation measures</p>	A cumulative air quality impact assessment was presented in Table 31, indicating a potential for a “just noticeable change” in visibility to occur from 13 to 20 days per year. However, the EA stated “given the conservative assumptions incorporated into the cumulative visibility impact analysis ... and considering the magnitude, frequency, duration, and timing of the predicted impacts, it is unlikely that perceptible visibility impacts would actually occur from the Proposed Action when combined with other activities in the Piceance Basin.” In addition, a re-analysis of potential impacts from the proposed EGL RD&D Project has reduced the conservatively modeled cumulative visibility impacts from 11 to 16 days per year, which again are unlikely to actually occur. Finally, the BLM recognizes the Forest Service’s use of 0.5 dv as a significance threshold when analyzing potential direct impacts from a proposed facility subject to New Source Review for the Prevention of Significant Deterioration under Section 165 of the Clean Air Act (as described in the FLAG Guidance Report.) However, 0.5 dv represents one half of a “just noticeable change” in visibility. BLM uses a 1.0 dv “just noticeable change” as a NEPA analysis threshold because any lower level would not be perceptible.

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		for the significant visibility impacts at Flat Tops.	<p>The BLM determined using the conservative AERMOD model was an adequate for the EA analysis. Although the CALPUFF model would produce less conservative results, its use is considerably more intensive. If the more conservative analysis demonstrates that significant impacts are unlikely to actually occur, a less conservative analysis is not necessary. Therefore, CALPUFF was not used for this project. In addition, BLM is planning to conduct a regional air quality impact assessment to analyze potential amendments to its White River Resource Management Plan, using CALPUFF or another more intensive but less conservative model.</p> <p>The BLM used its best professional judgment to interpret the results from the highly conservative AERMOD model, considering the magnitude, frequency, duration, and timing of the predicted impacts, and determined it is unlikely that perceptible visibility impacts would actually occur. The NEPA process is open to public and agency review so that others may perform their own interpretations of the analysis. BLM values input from other agencies, organizations and individuals in helping to inform its final decision.</p>
Air-6	WilSta-5, WilSta-15, WRA-8a, WRA-8b	<p><u>Increment</u> The near-field analysis indicates that Class II PSD PM10 and SO2 increments will be violated.</p>	<p>The near-field analysis has been revised based on revisions made to the emission inventory, and revised modeling results are presented in Tables 5 and 31. Several overly conservative assumptions used to estimate the emissions in the July 27, 2006 EA have been refined, mitigation measures have been added to traffic emissions, and additional emission sources have been added. Based on the revised emission inventory, the near-field model was rerun and the analysis indicates that PSD Class II increments will not be exceeded.</p>

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Air-7	WilSta-1F	There is no mention of emissions from other sources such as storage tanks, pumps, compressors, or backup power generators in the EA.	All pumps, fans, and water treatment equipment were not included in the emission inventory because they are electric. A single 25 kW emergency generator was identified but was not analyzed because it would only be needed under unforeseen upset conditions. Storage tanks were included in the inventory but had minimal VOC emissions.
Air-8	WilSta-1G	Wanted to know what the power requirements would be for the electrical resistance heaters and other equipment.	BLM evaluated the electrical power requirements likely to be required by all five oil shale RD&D projects, and determined those requirements would be met by available existing sources. Electrical resistance heaters may be used for a portion of the heating, but the need, their size, and the portion of time they might be used for heating has not been determined. Given the nature of this project, these operational refinements and their feasibility would be determined during the RD&D project process.
Air-9	WilSta1H	Need to assess the increased air emissions from power plants in the region associated with the maximum electric power usage and include emissions in the air quality impact analyses especially the cumulative impacts.	BLM evaluated the electrical power requirements likely to be required by all five oil shale RD&D projects, and determined those requirements would be met by available existing sources. If the RD&D technology is shown to be successful, an EIS must be prepared to analyze impacts of potential commercial scale operations before a decision approving such operations can be authorized.
Air-10	APCD-2, APCD-8, WRNF-3	Modeling is deemed inadequate by the APCD. AERMOD results may significantly underestimate impacts at Dinosaur National Monument and Flat Tops Wilderness Class I areas.	The BLM determined using the conservative AERMOD model was an adequate for the EA analysis. Although the CALPUFF model would produce less conservative results, its use is considerably more intensive. If the more conservative analysis demonstrates that significant impacts are unlikely to actually

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		If the model is a conservative one, and that is the reason why the results are to be discounted, than a different model should be used that is more accurate.	occur, a less conservative analysis is not necessary. Therefore, CALPUFF was not used for this project. In addition, EGL will conduct modeling during the permitting process as directed by CDPHE-APCD. In addition, BLM is planning to conduct a regional air quality impact assessment to analyze potential amendments to its White River Resource Management Plan, using CALPUFF or another more intensive but less conservative model.
Air-11	WilSta-6, WRA-8c	Did not provide any analysis of the mitigation measures (Subalternative). No analysis was performed to verify statements in the Subalternative.	The air quality analysis provided a conservative estimate of potential impacts. Further mitigation (i.e.; the sub alternative) would only decrease this estimation even further.
Air-12	WilSta-7, WRA-7j	Does not appear that BLM adequately assessed maximum cumulative near-field impacts. The maximum cumulative impacts are much less than the impacts predicted from operation of just the EGL project. Did not model total worst case emissions or did not evaluate pollutant concentrations at the receptors of maximum concentration. Resolve discrepancies.	The near-field analysis has been revised based on revisions made to the emission inventory, and revised modeling results are presented in Tables 5 and 31. A cumulative air quality impact assessment was presented in Table 31 based on potential operational emissions from all five oil shale RD&D projects, as well as the current ExxonMobil Piceance Creek Development Project. Maximum predicted cumulative far-field impacts were presented for receptors locations within the Piceance Basin, Dinosaur National Monument, and the Flat Tops Wilderness Area. Logically, the maximum impact from any one of these cumulative emission sources would be greater the closer to the individual project (reported as direct concentrations in Table 5).
Air-13	WilSta-9, WilSta-15	The total nitrogen and sulfur deposition levels are expected to be significant. Results relied on unreasonably high thresholds. EGL must include a discussion and evaluation of mitigation measures to	Fox, et.al., 1989 (“A Screening Procedure to Evaluate Air Pollution Effects on Class I Wilderness Areas”) was developed and prepared by a group of scientists and land managers to establish levels (3 kg/ha-yr) at which total nitrogen and sulfur

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RESPONSES TO COMMENTS FOR AIR**

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		avoid or minimize these impacts.	<p>deposition would be unlikely to cause significant air quality impacts. The BLM recognizes the Forest Service’s current use of Deposition Analysis Thresholds (DAT at 0.005 kg/ha-yr) as a significance threshold when analyzing potential direct impacts from a proposed facility subject to New Source Review for the Prevention of Significant Deterioration under Section 165 of the Clean Air Act (as described in the FLAG Guidance Report.) However, 0.005 kg/ha-yr represents an assumed natural background deposition level, made even more conservative by applying both a “variability factor” and a “cumulative factor.” This may be appropriate for regulatory permit review, but there is no legal justification to use an ultra-conservative “natural background” DAT for NEPA analyses. BLM uses 3 kg/ha-yr as the NEPA analysis threshold because it is the level below which significant impacts are not likely to occur. BLM will continue to review the scientific literature to determine if this analysis threshold needs to be adjusted.</p> <p>A cumulative air quality impact assessment was presented in Table 31, demonstrating that no significant sulfur or nitrogen deposition impacts would occur. In addition, although the Table indicated a potential for a “just noticeable change” in visibility to occur from 13 to 20 days per year, the EA stated “given the conservative assumptions incorporated into the cumulative visibility impact analysis ... and considering the magnitude, frequency, duration, and timing of the predicted impacts, it is unlikely that perceptible visibility impacts would actually occur from the Proposed Action when combined with other activities in the Piceance Basin.” In addition, a re-analysis of potential impacts from the proposed EGL RD&D Project has reduced the conservatively modeled cumulative visibility impacts from 11 to</p>

**TABLE 4 - Air
RESPONSES TO COMMENTS FOR AIR**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
			16 days per year, which again are unlikely to actually occur.
Air-14	WilSta 10	Failed to analyze impacts on other Class I Areas. There are other Class I areas that could be affected by the oil shale R&D project and additional reasonably foreseeable sources.	The cumulative air quality impact assessment provided a conservative estimate of potential impacts at the closest downwind mandatory federal PSD Class I Flat Tops Wilderness Area. Other Class I areas further downwind and in other directions would only decrease this estimation even further.
Air-15	WilSta-11	Modeling should have used additional years of meteorological data. Enough met data should be obtained to ensure that worst-case conditions are represented.	The meteorological data used is the most representative data for the project area given the location these data were collected. EPA's <i>Guideline on Air Quality Models</i> (40 CFR 51 Appendix W) addresses the regulatory application of air quality models for assessing criteria pollutants under the Clean Air Act. The Guideline does recommend that "at least three years of meteorology data (need not be consecutive) may be used if mesoscale meteorology fields are available" when analyzing long range transport. However, this guidance is not required by EPA regulations, nor necessarily applicable to NEPA analyses. BLM determines the analytical procedure for analyzing potential air quality impacts on a case-by-case basis, considering all available scientific methods appropriate for the specific situation.
Air-16	WilSta-12	Failed to include an analysis of VOC emissions or its impacts on ozone concentrations. The VOC emissions from the oil shale operations should have been assessed along with the other oil and gas development currently existing and reasonably foreseeable.	Currently there are no acceptable methods to predict potential ozone impacts on a local level. Ozone analysis is applicable on a regional scale using a photochemical model to fully capture the effects of ozone producing chemicals from both local and distant sources. The BLM is planning to conduct a regional air quality impact assessment to analyze potential amendments to its White River Resource Management Plan.
Air-17	WilSta-13	Failed to include hazardous air pollutant emissions and impacts.	Hazardous air pollutant emissions were not analyzed as there are no standards to compare results to. Monitoring plans to detect

**TABLE 4 - Air
RESPONSES TO COMMENTS FOR AIR**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
			and mitigate any potential for release of HAPs are being developed and would be implemented to gather baseline data and to monitor the process for the duration of the RD&D project. All monitoring plans will be approved by the BLM prior to implementation.
Air-18	WiSta-14	There is no mention of CO2 emissions or other greenhouse emissions. Need to show that these cumulative emissions do not have a significant impact. Strongly urged that an assessment of increased greenhouse gas emissions be included. Need to show that the cumulative emissions do not have a significant impact.	Monitoring plans are being developed to gather baseline data, as well as experimental validation of new recovery techniques for in-situ processing with the potential to mitigate so called “greenhouse gas” emissions is being investigated. Given the lack of regulations controlling potential CO ₂ emissions, the uncertainty in quantifying potential emissions, and a lack of analysis methods to relate emissions to impacts, potential impacts on climate can not be quantified; however, based on the relatively small scale of the proposed RD&D project compared to world-wide CO ₂ emissions, no significant impact to climate change are likely to occur.
Air-19	APCD-3	Receptor grid is not adequate to determine long range impacts, the NPS recommends spacing of 1,400 for the Flat Tops Wilderness Area instead of the 2,000 meter spacing used.	Flat Tops Wilderness Area modeling receptors were obtained from the NPS ARD data set. However, given the large number of receptors presented, a subset was used to optimize AERMOD processing. In addition, several receptors were adjusted to correspond to the Wilderness Area boundary, and others were added for locations of high elevation. Both of these adjustments were made to conservatively identify points of maximum potential impact. BLM is aware of the CDPHE-APCD’s Colorado Class I SO ₂ area image maps, but not specific modeling receptor inventories. Therefore, the Dinosaur National Monument was digitized specifically for this project (emphasizing boundaries and points of high elevation).

**TABLE 4 - Air
RESPONSES TO COMMENTS FOR AIR**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
Air-20	WilSta-3, WilSta-4, RBC-12	<p>Cannot rely on the background monitoring data to reflect all existing sources unless it can be demonstrated that the impacts of all existing sources are reflected in the monitoring data and reflect maximum concentrations.</p> <p>Monitoring data has not been shown to reflect concentrations near the EGL project area.</p> <p>Questioned the background PM10 values and wanted to know if they included PM2.5 values (i.e., are they additive?)</p>	<p>The background estimate for air quality of Piceance Basin was provided by the CDPHE-APCD, and constitutes the best available data to establish regional background air quality conditions (including the project area). The background values included annual means and second and fourth maximums. As shown in Table 5, these background data were used to determine the maximum potential air quality impacts.</p> <p>Specifically, the Annual and 24 hour PM₁₀ background concentrations of 11 and 41 µg/m³ were provided by the CDPHE-APCD on January 18, 2006. The PM_{2.5} and PM₁₀ values are not additive. PM_{2.5} is a subset of PM₁₀. PM₁₀ is particulate matter equal to or less than 10 microns in diameter. PM_{2.5} is particulate matter equal to or less than 2.5 microns in diameter. PM_{2.5} is therefore included in PM₁₀ because it has a diameter less than 10 microns. In addition, both pollutants have different public health and welfare effects, so their applicable Ambient Air Quality Standards are different.</p>
Air-21	RBC-13, RBC-15, RBC 18	<p>Questioned the results of trenching vs. road traffic values regarding PM 10 and PM 2.5 in Table 4. What is the source used? Also questioned if the air pollutant model assumed control of particulate sources and, if so, at what effectiveness. Endorsed “appropriately surfaced” roads and dust inhibitors.</p>	<p>The source of the trenching and grading emission factors are from EPA’s “<i>Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, Fifth Edition</i>” AP42, Table 11.9-1, available at: http://www.epa.gov/ttn/chief/ap42/ The road traffic emission factors are from AP42 Table 13.2.2(1a). The PM_{2.5} and PM₁₀ assumptions used to develop the emissions for all the construction activities in the July 27, 2006 EA (including trenching) were reevaluated to better represent the reasonably foreseeable construction activities. Previously, the basis of the construction activities and durations were overly conservative. Adjustments were made to the emissions inventory to reflect</p>

**TABLE 4 - Air
RESPONSES TO COMMENTS FOR AIR**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
			<p>these changes. The emission factors for traffic are from AP42 and were adjusted for the observed precipitation for the area (30 percent natural control). After reviewing these emissions, and the near field model, it was determined that additional mitigation would be needed. At a minimum, a 50 percent control efficiency was assumed for fugitive dust emissions using water as a dust suppressant. This is a conservative estimate as other dust inhibitors are available with higher control efficiencies. BLM will require at least 50 percent control to mitigate fugitive dust impacts. In addition, dust control may be addressed as a condition of approval during the permitting process with CDPHE-APCD.</p>
<p align="center">Air-22</p>	<p>RBC-14</p>	<p>On p. 14, there is discussion about occasional levels of ozone approaching federal standards. The respondent questioned if other local sources other than regional transport or stratospheric ozone subsidence contribute to this condition.</p>	<p>As stated in the EA, the high ozone levels have been episodic and their specific causes have not been determined. However there are a number of existing sources that may contribute to the occasional high ozone levels observed and include mobile combustion sources and oil and gas operations. However, there are currently no acceptable methods to predict potential ozone impacts on a local level. Ozone analysis is applicable on a regional scale using a photochemical model to fully capture effects ozone producing chemicals from both local and distant sources. BLM is planning to conduct a regional air quality impact assessment to analyze potential amendments to its White River Resource Management Plan.</p>
<p align="center">Air-23</p>	<p>RBC-17</p>	<p>Table 5 suggests that the 24-hour direct PM10 concentration level would be greater than the 24-hour background level, yet the predicted direct annual concentration would be a smaller fraction of the annual background - please explain.</p>	<p>As indicated in the response to RBC-13 and RBC-15, the particulate emissions were reevaluated and remodeled to better represent the planned activities. Furthermore, the annual and 24 hour background concentrations are actual measured concentrations observed at the American Soda monitoring</p>

**TABLE 4 - Air
RESPONSES TO COMMENTS FOR AIR**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
			location. These background levels are based on existing sources and their relation to specific monitoring locations, and are expected to correlate to the proposed projects particulate emissions.
Air-24	RBC-32	When is CALPUFF available and will BLM redo the modeling completed for this impact analysis using CALPUFF?	The BLM determined using the conservative AERMOD model was adequate for the EA analysis. Although the CALPUFF model would produce less conservative results, its use is considerably more intensive. If the more conservative analysis demonstrates that significant impacts are unlikely to actually occur, a less conservative analysis is not necessary. Therefore, CALPUFF was not used for this project. In addition, BLM is planning to conduct a regional air quality impact assessment to analyze potential amendments to its White River Resource Management Plan, using CALPUFF or another more intensive but less conservative model.
Air-25	APCD-5	Cumulative Impact Requirements - Modeling results for 24-hour and annual PM10, 3-hour, 8-hour and annual SO2 in Table 5 exceed modeling significance levels. An impact analysis that includes the proposed source and all nearby sources as well as the applicable background concentration should be conducted to determine cumulative impacts.	Significant Impact Levels (SILs) are used by Air Quality Regulatory Agencies to prioritize modeling activities and permit requirements under the Clean Air Act, and are simply not applicable to determine potential significant impacts under NEPA. In addition, BLM is planning to conduct a regional air quality impact assessment to analyze potential amendments to its White River Resource Management Plan, using CALPUFF or another more intensive but less conservative model.
Air-26	APCD-10	Reference for Impact Threshold from Fox, et.al., 1989 questioned. Fox reference no longer used by the U.S. Forest Service to evaluate deposition impacts.	Fox, et.al., 1989 ("A Screening Procedure to Evaluate Air Pollution Effects on Class I Wilderness Areas") was developed by prepared by a group of scientists and land managers to establish levels (3 kg/ha-yr) at which total nitrogen and sulfur

**TABLE 4 - Air
RESPONSES TO COMMENTS FOR AIR**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
			<p>deposition would be unlikely to cause significant air quality impacts. The BLM recognizes the Forest Service’s current use of Deposition Analysis Thresholds (DAT at 0.005 kg/ha-yr) as a significance threshold when analyzing potential direct impacts from a proposed facility subject to New Source Review for the Prevention of Significant Deterioration under Section 165 of the Clean Air Act (as described in the FLAG Guidance Report.) However, 0.005 kg/ha-yr represents an assumed natural background deposition level, made even more conservative by applying both a “variability factor” and a “cumulative factor.” This may be appropriate for regulatory permit review, but there is no legal justification to use an ultra-conservative “natural background” DAT for NEPA analyses. BLM uses 3 kg/ha-yr as the NEPA analysis threshold because it is the level below which significant impacts are not likely to occur. BLM will continue to review the scientific literature to determine if this analysis threshold needs to be adjusted.</p>
Air-27	APCD-11	The reference for drill rig emission factors are provided as Tier 1. APCD would expect EGL to operate drill rigs meeting the latest EPA standards for nonroad engines.	EGL is committed to using Tier I or better emission standards for drill rig engines. Therefore, BLM would require this committed mitigation as part of a use authorization. The enforcement will be addressed during the permitting process with the CDPHE-APCD. In addition, BLM will not approve any activity which does not comply with all applicable local, state and federal air quality regulations.
Air-28	APCD-13	The air permitting section on page 17 is incomplete.	The air permitting regulatory thresholds and framework will be added. A preliminary list of regulatory air permits can be added along with a full list of other regulatory permits anticipated for the project.

**TABLE 4 - Air
RESPONSES TO COMMENTS FOR AIR**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
			<p>The EA text has been revised to indicate: 1) any emissions source with the potential to emit any “criteria” pollutant in excess of 2 tons per year, or any “non-criteria” in excess of the corresponding de minimis level, including Hazardous Air Pollutants (Colorado Regulation Number 3, Part A, Appendix A), must submit an Air Pollution Emissions Notice (APEN) to the CDPHE-APCD for approval prior to operation; and 2) Emissions sources required to file an APEN may also be subject to Construction Permitting requirements as listed in Colorado Regulation Number 3, Part B; 3). APENs must be updated annually if operating conditions change, or otherwise expire every five years. In addition, BLM will not approve any activity which does not comply with all applicable local, state and federal air quality regulations.</p>
Air-29	APCD-14	APCD suggests further mitigation options be employed such as erosion control measures during construction activities, dust control during construction, control of bare dust areas during wind events and covers on topsoil and other stockpiles.	The EA text has been revised to include these practices as potential mitigation measures.
Air-30	APCD-15	Colorado does implement and enforce the federal air quality standards for PM2.5 and 8-hour ozone through permitting and air quality plans. It is incorrect to state that EPA is solely responsible for implementing these standards.	The EA text has been revised to include this correction.
Air-31	APCD-17	APCD reiterates that the BLM must examine the air quality impacts of commercial scale operations before commercial construction is allowed to	If the RD&D technology is shown to be successful, an EIS must be prepared to analyze impacts of potential commercial scale operations before a decision approving such operations can be

**TABLE 4 - Air
RESPONSES TO COMMENTS FOR AIR**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
		proceed.	authorized.
Air-32	WRNF-4	Request the language in the EA be revised to accurately describe the visibility impact threshold. Currently states it to be anything 'greater than 1.0 deciview' and the threshold is anything "equal to or greater than 1.0 deciview'.	The EA text has been revised to indicate “equal to or greater than 1.0 deciview.”

**TABLE 4-Water
RESPONSES TO COMMENTS FOR GROUNDWATER, SURFACE WATER AND WATER RIGHTS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
GW-1	USGS-1 USGS-7 (in part) USGS-8 USGS-14 USGS-15 WQCD-5 Mil-3 Mil-4 Mil-6a CDOW-8a CDOW-8b RBC-20a RBC-24 WRA-1b (in part) WRA-9a WRA-9l WRA-9n WRA-9o WRA-9x (in part) WRA-9z Tobin-11	<p>Groundwater monitoring plans for the various RD&D leases should have similar designs, monitored parameters, data collection techniques, analytical protocols, and quality assurance.</p> <p>The EGL groundwater monitoring plan should be detailed and define water bearing zones monitored, number and locations of wells, frequency of monitoring, constituents to be monitored, and analytical methods. It should address hydrogeologic conditions (including dewatering and reinjection operations) as well as water quality. Hydrogeologic data should include the collection of core and be adequate to allow an assessment of fracturing processes, vertical movement of water, and movement of water into and out of the retort zone. The monitoring plans should require multi-level completions, encompass an appropriate geographic area, and take into consideration local structural geology. The plan should encompass all phases of the project: pre-retorting baseline, retorting, and post-retorting operations. The plan should be prepared prior to beginning any retorting operations. Monitoring requirements should be part of lease terms.</p>	<p>During the first phase of the project, a large sample of oil shale will be obtained and subjected to bench-scale simulations of retorting and post-retorting conditions (p. 59 of the EA). In particular, the rock will be heated in the presence of native groundwater and slowly cooled. Native groundwater will then be re-introduced to the cooled rock. Detailed analyses of water prior to and after retorting will indicate which constituents have been altered in concentration or form, or introduced to the groundwater.</p> <p>In addition, test holes will be drilled and cored at the EGL site to obtain detailed information regarding stratigraphy, hydraulic parameters, and local groundwater flow patterns. This data will be aggregated with similar data obtained at the other RD&D sites to obtain a near-regional perspective.</p> <p>Using this data, EGL will develop a detailed water monitoring and response program in cooperation with BLM, USGS, CDPHE, and industry. The monitoring and response plan will address monitor well locations, water-bearing units to be monitored, monitor well design, analytes, water level measurements, frequency of sampling and analysis, sampling techniques, analytical methods, QA/QC processes, and reporting requirements.</p> <p>The water monitoring and response plan will not be restricted to groundwater, but will address surface water upstream and downstream from the EGL site, springs, seeps, and groundwater-surface water interactions.</p>
GW-2	CDOW-8d	Hydraulic properties of underlying strata are not	In the initial phase of the project, test holes will be drilled and

**TABLE 4-Water
RESPONSES TO COMMENTS FOR GROUNDWATER, SURFACE WATER AND WATER RIGHTS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
	Mil-8 RBC-20 (in part) Tobin-1 Tobin-9 USGS-10 USGS-19 USGS-20	well known and should be established. These properties include porosity, permeability, connectivity between aquifers, competency of the R5 and R7 units, and sensitivity of the R7 to fracturing.	cored at the EGL site to obtain detailed information regarding stratigraphy, hydraulic parameters of key stratigraphic units, and local groundwater flow patterns (p. 59 of the EA).
GW-3	Klu-6 USGS-2 USGS-21 WQCD-15 WRA-9c Wat-2	Upon retorting, what happens to the physical and hydraulic properties of the oil shale, and what impact would those changes (including effects of dry gas production, carbon dioxide production, and fracturing) have on fluid transport?	<p>During the first phase of the project, a large sample of oil shale will be obtained and subjected to bench-scale simulations of retorting and post-retorting conditions (p. 59 of the EA). In particular, the rock will be heated in the presence of native groundwater and slowly cooled. Laboratory analyses of the initial and post-retorting hydraulic properties of the rock sample will provide the best assessment of likely in-situ changes in physical and hydraulic properties.</p> <p>BLM anticipates that as further heating and oil production takes place, the conductive fractures and pores will become oil-wet, causing post-production transmissivity to be similar or lower than pre-production. A comparison of predicted groundwater behavior (derived from the groundwater model that will be developed) with hydraulic response observed in monitoring wells will establish whether these assumptions are valid or not.</p> <p>EGL plans to leave a zone of un-reacted oil shale in place surrounding the production zone to provide further hydraulic isolation.</p>
GW-4	Klu-5 USGS-4 USGS-7 (in part)	Additional information should be provided regarding how long pumping and treating may be required, whether de-watering wells could draw	Preliminary calculations show that the area of influence from pumping and injection should be confined to the 160-acre test site unless the lateral hydraulic conductivity is much higher than

TABLE 4-Water
RESPONSES TO COMMENTS FOR GROUNDWATER, SURFACE WATER AND WATER RIGHTS

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
	USGS-23 USGS-24 WRA-9i WRA-9j Mil-6	contaminants from the retort zone, whether dewatering might cause upward movement of groundwater from the lower aquifer, and the potential impacts of dewatering on adjacent surface and groundwater resources.	<p>reported (page 91 of the July 27, 2006 EA). This suggests that adjacent surface waters would not be affected by the groundwater withdrawal-reinjection system. More accurate calculations of the extent of the area of influence will be possible after the hydraulic parameters and flow characteristics of the site are determined from shale sample tests, test holes, and the monitor well network. A groundwater model based on these parameters will be used to design the de-watering and re-injection plans and should be able to provide preliminary calculations regarding how long the system may be required to operate.</p> <p>The groundwater withdrawal/reinjection system and the retort zone are all in the upper aquifer. There is no reason to believe that the RD&D project will alter relative heads between the upper and lower aquifers, suggesting that there will not be any induced flow from the lower aquifer to the upper aquifer.</p> <p>Because the groundwater extraction and reinjection wells are relatively close to each other, the withdrawal of water above the retort zone is not likely to induce a reduction in head external to the retort zone and cause fluid flow from the retort zone into the upper aquifer.</p>
GW-5	Klu-1 Tobin-3 Tobin-5 WQCD-11 WQCD-4 CDOW-9a Wat-1	Questions were raised about local and regional hydrogeology, including recharge mechanisms, the need for local hydrogeologic data, thickness and extent of alluvial aquifers at the site, local versus regional groundwater flow patterns, and groundwater-surface water interactions.	Available literature provides an overview of regional hydrogeology and, coupled with site topography, an indication of expected local hydrogeologic conditions. The hydrogeologic data that will be gathered in the initial phase of the EGL project, coupled with similar data gathered at other RD&D sites, will allow a much more comprehensive assessment of baseline conditions prior to retorting (p. 91 of the EA).

**TABLE 4-Water
RESPONSES TO COMMENTS FOR GROUNDWATER, SURFACE WATER AND WATER RIGHTS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
GW-6	USGS-16 USGS-18 WRA-9p	The EA needs to analyze the potential for heating and dewatering to increase fracturing in the R6 and Mahogany Zone and any impacts that may result. How will induced and natural fractures affect the movement of heat and fluids, and how will this be monitored?	Any induced or natural fractures should have little impact on the flow of heat and fluids. First, EGL plans to leave a zone of un-reacted oil shale in place surrounding the production zone to enhance hydraulic isolation (p. 58 of the July 27, 2006 EA). Second, as heating and production of oil takes place the conductive fractures and pores will become oil filled, lowering hydraulic conductivity as a multiphase system is created (p. 58 of the July 27, 2006 EA).
GW-7	USGS-17 WRA-1f	The EA fails to evaluate the impacts of hydraulic fracturing on the existing groundwater regime, and on the regime that will result once the oil shale resource has undergone pyrolysis.	Hydrofracturing in the production zone should increase the local hydraulic conductivity, but it is unclear how far that enhanced conductivity will extend. EGL plans to develop the upper portion of the Mahogany, and fracing should not extend into surrounding areas of the upper aquifer. In addition, EGL plans to leave a zone of un-reacted oil shale in place surrounding the production zone to provide further hydraulic isolation.
GW-8	Klu-4 USGS-3 USGS-22 WRA-9bb RBC-10 Mil-5	What is the basis for estimate of water production? Are any estimates of the retort water quality available? Would high pressures in the retort zone push oil/gas/leachates out? On-site disposal of retort water should be considered.	EGL estimate of water production was based on typical Fischer assay data for oil shale in the region. While vapor pressure in the retort zone would tend to push liquids and gases out, the amount of steam drive will be minimized by dewatering the production zone prior to retorting. The return of water to the retort zone will be minimized both by continued dewatering and the steam drive created by residual water in retort zone that will push water outward from the zone and create a hydraulic barrier. In addition, as further heating and production of oil takes place the conductive fractures and

**TABLE 4-Water
RESPONSES TO COMMENTS FOR GROUNDWATER, SURFACE WATER AND WATER RIGHTS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
			<p>pores will become oil filled, further lowering hydraulic conductivity as a multiphase system is created (p. 58 of the July 27, 2006 EA).</p> <p>On-site disposal of retort water would not necessarily be advantageous from the standpoint of environmental impacts.</p>
GW-9	WQCD-2 WRA-9b RBC-4 USGS-5 (in part) USGS-12 WQCD-3 WRA-9q	The EA does not provide details about the construction, operation, casing or lining of the underground heat transfer and hydrocarbon collection systems. What hazards would result from release of the heat-transfer liquids into groundwater?	<p>Appendix F of EGL’s final proposal to BLM contains details regarding the construction and operation of their monitoring, production, and heating wells, as well as the closed loop for heating the kerogen. Process monitoring will ensure the heating system maintains structural integrity.</p> <p>As noted on p. 51 of the July 27, 2006 EA, none of the potential transfer fluids is considered extremely hazardous or toxic. During preparation of the water monitoring plan, consideration will be given to including the heat transfer fluid in the list of analytes monitored.</p>
GW-10	CDWR-5 WRA-9d RBC-19b	All water wells constructed for purposes of monitoring, dewatering, recharge, injection, and production must comply with state standards. Livestock and domestic use wells must be protected during drilling and well completion. How will wells be closed and abandoned?	EGL will obtain all required permits, comply with applicable rules, and use licensed contractors. Closure will comply with applicable laws and regulations.
GW-11	RBC-7 USGS-11	What will the groundwater restoration criteria be? Is it technically feasible to meet them? Remediation should include consideration of constituents that are not regulated by state groundwater quality standards.	Groundwater will be restored to a quality that conforms to applicable groundwater quality standards and that is protective of the uses that the groundwater quality standards are intended to protect. Constituents not specifically listed in state groundwater quality standards will be included to the extent necessary to provide the required user protection.

**TABLE 4-Water
RESPONSES TO COMMENTS FOR GROUNDWATER, SURFACE WATER AND WATER RIGHTS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
GW-12	Tobin-8 WRA-1d WRA-1e WRA-4f WRA-9aa	The magnitude and duration of potential impacts to geohydrology, geomorphology, pyrolysis, water quality, groundwater supplies, and contaminant mobility must be assessed.	The EA has considered potential impacts to groundwater, surface water, and water resources to the extent possible with available data. The planned monitoring and response program is intended to provide considerably more information prior to retorting and to monitor impacts to water during the entire RD&D program (see GW-1). Measures for addressing unanticipated and unacceptable impacts occur during any phase of the project, will be incorporated into the plan.
GW-13	Tobin-10	Define "equivalent aquifer."	The term "equivalent" will be replaced with "same."
GW-14	Tobin-7	Include a reference to Welder and Saulnier, 1978 in the discussion on page 56, third paragraph.	The requested reference will be added.
GW-15	USGS-13	How will EGL know when heating in the upper part of the Mahogany zone has reached an appropriate limit? What limit is necessary for protection?	EGL plans to have temperature sensors in both the producing wells (to determine vertical temperature gradients) and in the de-watering wells (to determine horizontal temperature gradients). Temperatures in the shale surrounding the retort zone will be kept below temperatures that would initiate pyrolysis reactions.
GW-16	USGS-7a	Are records available for Great yellowstone Sulphur Creek #1?	The cited records will be sought, and any available and useful data will be incorporated into the EA.
GW-17	WRA-1c	How does the "flooded reverse circulation" process minimize potential "lost circulating problems" in the Uinta formation?	With flooded reverse circulation, a flooding fluid or added water is used to maintain a positive pressure against the open borehole to minimize sloughing.
GW-18	WRA-7f	Relying on the White River Resource Area boundary as the limit to cumulative impact area is	The White River Resource Area appears to be an appropriate scale that encompasses all five RD&D projects and the

**TABLE 4-Water
RESPONSES TO COMMENTS FOR GROUNDWATER, SURFACE WATER AND WATER RIGHTS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
		arbitrary in scope for water resources.	groundwater/surface water basins affected by or receiving water potentially affected by the five projects. To use a significantly smaller geographic area would make it difficult to aggregate the impacts of the five projects.
GW-19	Mil-1	Subsidence could occur during the operations phase.	Because of the depth of the retort zone and because the oil shale will remain in place, no subsidence is expected.
GW-20	RBC-20 (in part)	The proposed production zone and leached zone should be shown on Figure 5.	Figure 5 will be modified to show the retort zone. The location of the leached zone in the stratigraphic column will not be shown because of the lack of site-specific data. Test holes to be drilled in the early phases of the project will establish the upper and lower elevations of the leached zone.
GW-21	USGS-6	What evidence suggests that, at this location, the saline part of the section is well below the base of R6? If nahcolite remains in significant quantities at the top of L5 at this RD&D site then generation of CO2 and degradation of water quality would be expected.	Detailed stratigraphic data for the EGL site is not available to BLM at this time. For that reason, the initial phase of the project will include the drilling and coring of test holes at the site to obtain detailed site-specific data (p. 59 of the July 27, 2006 EA).
GW-22	WRA-1b	The EA lacks detailed information on the likely effects that a “boiling layer of oil” could have on groundwater resources or resulting transmissivity of the region.	Because EGL plans to leave a zone of un-reacted oil shale in place surrounding the production zone to provide hydraulic isolation and because the conductive fractures and pores surrounding the retort zone are expected to become oil-wet (causing post-production transmissivity to be similar or lower than pre-production), the oil within the retort zone is not expected to cause an adverse impact on groundwater resources or surrounding rock transmissivity.

**TABLE 4-Water
RESPONSES TO COMMENTS FOR GROUNDWATER, SURFACE WATER AND WATER RIGHTS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
			Additional information gathered as part of bench-scale testing during the first phase of the project will allow a better assessment of likely in-situ changes in physical and hydraulic properties.
GW-23	Mil-9	The EA states that TDS concentrations in the lower aquifer could range up to 20,000 mg/l. That seems high.	The upper limits of TDS concentration are highly affected by mineralogy of strata from which the samples are taken and can vary widely within the aquifer.
GW-24	USGS-9	If a substantial quantity of breccia is present at the top of L5 at this site, what prevents significant degradation of water quality in the brecciated unit from byproducts of the retort process? Moreover such a breccia zone would present a pathway for heat to migrate laterally rather than through the overlying oil shale. Breccia beds within the R6 unit may also present problems if there is high permeability associated with them, as heat and fluids may preferentially follow these units.	Whether or not brecciated zones are present below the EGL site and their potential impacts if they exist can only be determined after test holes have been drilled at the site. That data will be obtained and assessed in the initial phases of the RD&D project.
GW-25	WQCD-12	Requested text should be revised to reflect higher Safe Drinking Water Act (SDWA) TDS limit of 3,000 mg/L instead of TDS greater than 1,000 mg/L	The SDWA National Secondary Drinking Water Regulations have a TDS standard of 500 mg/L. This statement will remain unchanged in the document, but a reference for the 1,000 mg/L value will be added.
GW-26	Tobin-6	Maintenance of surface water flow quality and quantity is not ensured by a monitoring program only, and data in EA does not contain sufficient detail to ensure these resources will be protected.	The monitoring and response program will provide BLM with the information needed to determine whether impacts resulting from the project are significantly different from EA projections. Measures for addressing unanticipated and unacceptable impacts occur during any phase of the project, will be incorporated into the plan.

**TABLE 4-Water
RESPONSES TO COMMENTS FOR GROUNDWATER, SURFACE WATER AND WATER RIGHTS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
GW-27	WRA-9x (in part)	The EA fails to provide quantitative information or analysis demonstrating compliance with state water quality standards.	The analysis of water quality impacts discussed on pp. 55-56 did not identify any reasons why state water quality standards would be violated. The planned monitoring program will allow any violations of state water quality standards to be identified and provide BLM with the information needed to alter the RD&D program if necessary.
SW-1	WRA-9r WRA-9t	The EA states that approximately 80 percent of base water flow in Piceance Creek originates as aquifer baseflow. If only 80 percent of the base flow originates from groundwater sources, it is unclear where the other 20 percent of the base flow comes from.	The remaining 20 percent comes from snow melt and rain.
SW-2	WQCD-8 WQCD-9 WQCD-10 WQCD-17	Stream Segments 16 and 20 language implies only standards for four parameters have been adopted instead of full suite which includes parameters not listed. Class 2 waters are inaccurately defined. State-wide basic standards should be the objective rather than site-specific water quality classifications and standards.	The text will be modified as requested with respect to standards and classifications. The applicable standards for the EGL site will be state-wide basic standards, rather than site-specific water quality classifications and standards.
SW-3	WRA-9v WRA-9u WRA-9s	The EA does not provide any information about water quality conditions in Ryan Gulch other than its "Use Protected" designation. There is no information on Black Sulphur Creek sampling dates, number of samples collected, the sampling locations(s), or the proximity of the sampling locations to the EGL tract.	The text will be modified to state that Ryan Gulch is ephemeral in nature, flowing only in direct response to snowmelt runoff and high intensity precipitation events. Because of its ephemeral nature, water quality data are lacking. All available data for Black Sulphur Creek were used in preparation of the EA. No data were collected after 1981.

**TABLE 4-Water
RESPONSES TO COMMENTS FOR GROUNDWATER, SURFACE WATER AND WATER RIGHTS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
SW-4	CRBCA-1	Salinity concerns from Colorado River.	BLM recognizes the importance of minimizing the extent to which the EGL project might contribute to salt loads in the Colorado River, and language will be added to the EA to make this point. Produced water will not be used for dust control.
SW-5	CDO-2a WQCD-7 USGS-5 (in part)	A Spill Prevention, Control and Counter-measure Plan (SPCC) and Emergency Response Plan should be included in the EA. The reporting requirement for spills should be in the EA or updated spill response plans. Temporary storage of waste water between truck shipments should be described. Reclamation activities are not described in the project description.	An SPCC Plan and Emergency Response Plan will be developed and included in the EGL Plan of Development. The plans will include reporting requirements. In addition, reporting requirements will be included in the EA text. Onshore oil and gas regulations would be followed for water storage. Language will be added to the EA to describe the temporary storage of produced water. Reclamation activities are described throughout the EA in affected resources (see for example, soils, pp. 64-65, July 27, 2006 EA.)
SW-6	WQCD-16	Cumulative impacts discussion on stream impacts associated with construction runoff are appropriate when also indicating best management practices (BMPs) for erosion control would prevent impacts.	The use of BMPs to minimize sediment loadings is discussed on p. 64.
SW-7	RBC-31	Will BLM perform or require oil shale companies to monitor acid neutralizing capacity at Trappers and Ned or Upper Ned Wilson Lakes to ensure thresholds are not being exceeded?	The monitoring of pH and acid neutralizing capacity in and near the Flattops Wilderness is a responsibility of the WQCD.
SW-8	WQCD-18	Appendix A measures for Water Quality. WQCD has determined two permits will be required, stormwater discharges during construction, and stormwater discharges during operation. Doesn't appear there will be process discharge so no	EGL will conduct the RD&D in accordance with all applicable regulatory standards and permits.

**TABLE 4-Water
RESPONSES TO COMMENTS FOR GROUNDWATER, SURFACE WATER AND WATER RIGHTS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
		MINDI or or individual permit needed. If process discharge is needed, it will require 180-day lead time.	
SW-9	CDOW-11 CDOW-8 CDOW-8c WRA-9m WRA-9w RBC-19a WRA-9g	A comprehensive surface water resources monitoring plan for springs, seeps, wetlands, and surface waters upstream and downstream of the site, as well as acidification of Trappers Lake. The plan should cover baseline, operational phase, and post-retorting stages of the project. BLM should monitor EGL's compliance with the proposed mitigation measures to ensure that no degradation of Black Sulphur Creek occurs as a result of EGL's operations.	The water monitoring plan discussed in response to Comment GW-1 addresses surface water as well as groundwater.
WR-1	CDOW-10 CDWR-1 CDWR-2	The proposed operation may have the potential to impact existing water rights. The EA must demonstrate that the proposed project will not alter or impact vested water rights or develop a plan for augmentation may be required to replace all water depletions in time, place and amount.	EGL is not expected to adversely affect existing water rights of others. If access to appropriated water is required, EGL will either obtain rights to the water or develop an augmentation plan.
WR-2	WRA-9e	The EA fails to identify the sources of water required for drilling and operations.	As noted on p. 9 (July 27, 2006 EA), drilling water would be purchased and trucked to the site. Water for operations would likewise be acquired or taken from wells on site if possible.
WR-3	WRA-9h	The Colorado Water Conservation Board is developing an application for and instream flow right in Black Sulphur Creek near the vicinity of the project. The EA does not address this requirement.	EGL will not adversely affect any existing water rights senior to those that it might acquire. Water rights simply contemplated by agencies that may or not be filed, that may or not be senior to those that might be acquired by EGL are not within the scope of this EA.

**TABLE 4- Minerals
RESPONSES TO COMMENTS FOR MINERALS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
MN-1	CDOW-2f CDOW-9	Split estates could cause conflicts between mineral rights, priorities should be established. Priority of leasing (oil shale vs. oil and gas leasing) and the balance of multiple energy/mineral interests has not been addressed.	The EGL site does not have a split estate conflict. In addition, the retort zone does not contain other marketable minerals, and EGL's process will not interfere with the ultimate recovery of any minerals that may be present above or below the retort zone.
MN-2	Mil-10	Dawsonite is widespread. Address effects on aluminum and bauxite.	There is no indication that dawsonite or bauxite is present in marketable concentrations in the retort zone at the EGL site.
MN-3	Mil-2	Concern of BLM not wasting resources, by leaving behind as unrecovered "heavy ends" 40-50 million barrels. Methods should be improved before proceeding to a commercial lease.	Information obtained during the RD&D will be beneficial to maximizing the efficiency of EGL's recovery efficiency.
MN-4	Tobin-4	Rio Blanco nuclear shot is located near the site and should be considered.	The sites of past underground nuclear explosions are not considered close enough to affect the oil shale or to present a risk to workers at the site. During preparation of the water monitoring plan, consideration will be given to the possibility of including radionuclides in the monitoring program.
MN-5	USGS-6	What evidence suggests that, at this location, the saline part of the section is well below the base of R6? If nahcolite remains in significant quantities at the top of L5 at this RD&D site then generation of CO2 and degradation of water quality would be expected.	Detailed stratigraphic data for the EGL site are not available to BLM at this time. For that reason, the initial phase of the project will include the drilling and coring of test holes at the site to obtain the data.

**TABLE 4-NEPA Procedural
RESPONSES TO COMMENTS FOR NEPA PROCEDURAL AND SCOPE CONCERNS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
P-1	RBC-11	Requested clarification of the origin of the Standards for Public land Health and their implication of critical versus non-critical designation.	The Standards for Public Land Health amended Colorado BLM's land use plan to provide benchmarks for achieving sustainable land and resources. Critical elements, identified in Appendix 5 of BLM's NEPA Handbook (H-1790-1), are those elements of the human environment that are subject to requirements specified in statute, regulation, or executive order and must be considered in all EA's and EIS's.
P-2	WRA-1a CDOW-2c	The EA contains insufficient project description from the Plan of Operation	The EA summarized the Plan of Operations in a level of detail sufficient to identify, analyze, and mitigate potential impacts. Due to the nature of RD&D projects, some degree of process-related uncertainty is to be expected. However, the Plan of Operations was made available for public review and fully describes the process as it is known.
P-3	WRA-2 WRA-4c	The EA provides insufficient detail and analysis on lease terms and stipulations.	A draft final lease form was provided in the June 9, 2005 Federal Register Notice. Further, the NEPA analysis has identified mitigation measures that will be approved in the Decision Record. Approved mitigation terms will be included as special lease stipulations.
P-4	WRA-3a WRA-6f	The EA fails to comply with the White River Resource Area RMP by failing to analyze merits of technology and availability of alternate private lands for process testing.	The merits of technology were analyzed in the nomination process. In Section 369 of the Energy Policy Act of 2005, Congress required BLM to lease Federal oil shale lands for the purpose of experimentation with promising new technologies. There is no superseding requirement to evaluate the availability of private lands.
P-5	WRA-3b	The EA fails to establish the required environmental baseline describing carrying	The Piceance Basin RMP established carrying capacities that were carried forward into the White River RMP. The RMPs

**TABLE 4-NEPA Procedural
RESPONSES TO COMMENTS FOR NEPA PROCEDURAL AND SCOPE CONCERNS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
		capacities for several resources in Piceance Basin RMP.	mention that only unmitigated impacts count against the carrying capacities, NOT mitigated impacts. The EA analyzes the affected environment and identifies appropriate mitigation measures to minimize impacts. BLM has no reason to believe that unmitigated impacts exist or that this action will exceed identified carrying capacities.
P-6	WRA-4a	BLM did not respond to comments submitted in January 2005 in response to Federal Register Notice 67935 (Nov. 22, 2004).	BLM reviewed, considered and responded to those comments in Federal Register Notice of June 9, 2005.
P-7	WRA-4b	BLM did not respond to or address comments submitted in April 2006 in response to EA scoping meetings.	Comments received in April 2006 were in reference to the Programmatic Oil Shale and Tar Sands EIS and are outside the scope of this NEPA analysis. BLM developed a scoping report as part of the Programmatic EIS process. Concerns raised about groundwater, air quality, wastewater and special status species were considered as part of the analysis of the RD&D projects.
P-8	WRA-4d WRA-13 CDOW-2e	EA does not contain a "response to comments" section. Also Inclusion of DRAFT FONSI with a DRAFT EA is not common.	BLM is not required by NEPA to include a response to comments section in an EA. Comments received during the scoping sessions have been considered during the NEPA process, and were addressed in both the EA and the draft unsigned Finding of No Significant Impact. BLM NEPA guidance allows for inclusion of Draft Finding of No Significant Impact with Draft EA.
P-9	WRA-5	BLM's decision to define the purpose and need for the project exclusively from EGL's perspective is contrary to NEPA.	BLM derived the statement of Purpose and Need from the mandate in section 369(a) of the Energy Policy Act of 2005 to lease Federal oil shale for research and development, and the willingness of Shell, Chevron and EGL to test promising

**TABLE 4-NEPA Procedural
RESPONSES TO COMMENTS FOR NEPA PROCEDURAL AND SCOPE CONCERNS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
			technology at the scale of 160 acres. Other technologies proposed by other applicants were considered for other areas, but those proposals and the decisions about which to approve for RD&D projects are not part of the present EA. The Purpose and Need is not derived exclusively from the Companies' interests. Commenters failed to disclose a Purpose and Need statement that would meet the Congressional mandate in light of the Companies proposal to test technology.
P-10	WRA-6a WRA-6b WRA-6c WRA-6e	The EA contained an inappropriately narrow range of alternatives and failed to conduct a comparative analysis among a reasonable range of alternatives.	Documentation prepared under NEPA need only evaluate alternatives that would satisfy the needs and purposes of the project, even if there is only one alternative that satisfies those needs and purposes. BLM analyzed the proposal, a mitigation alternative, and a no action alternative. BLM did not identify any additional modifications to methodology or location that would lessen potential impacts.
P-11	WRA-6d	The no action alternative was adequately examined. No further explanation was given except 'no impacts' would occur.	BLM thoroughly analyzed the No Action Alternative. However, due to the nature of the proposal, the Affected Environment is the same as the No Action Alternative. No Action would not modify or change the resource conditions detailed in the Affected Environment or environmental impacts analyzed under the White River Resource Area RMP. No additional impacts would occur as a result of the No Action Alternative other than those anticipated and analyzed under the White River Resource Area RMP.
P-13	WRA-7a WRA-7c WRA-7d WRA-7l	The cumulative impact analysis is inadequate and the reasonably foreseeable development scenario is not analyzed to adequate detail.	The cumulative impacts analysis was comprehensive and appropriate given available information and reasonably foreseeable activities. The actions proposed in the three EAs for oil shale RD&D, as well as cumulative impacts to the Resource

**TABLE 4-NEPA Procedural
RESPONSES TO COMMENTS FOR NEPA PROCEDURAL AND SCOPE CONCERNS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
	WRA-7n CDOW-2g RBC-29		Area, are tiered to the White River RMP/EIS and are within the scope and analysis of that document.
P-14	WRA-7b WRA-7f	BLM fails to provide a rational reason for its decision to use the White River Resource Area as the boundary for analysis of cumulative impacts and the use of it is likely inappropriate for evaluating water resource impacts.	BLM provided a rational reason in the EA for designated the White River Resource Area as the unit of analysis. Because 100 percent of the 5 proposed actions occur within it borders, and the cumulative effects of nearby projects can be specifically evaluated in relation to the proposal, use of the WRRRA helps to set the context and intensity of potential impacts. Although the WRRRA is the designated analysis area, impact on adjacent areas have not been ignored. Many of the past present and future projects traverse boundaries and cross into adjacent areas and jurisdictions. BLM has assessed the cumulative impacts for those projects as well.
P-15	WRA-1i WRA-7e WRA-14c CDOW-2b APCD-17	BLM failed to consider the impact on the environment likely to result from commercial activities. It was identified as a reasonably foreseeable future activity and should have been included in the cumulative impact analysis. A legal description of the preference right acreage should have been provided in addition to the legal description of the RD&D tract.	Concerns addressing development of the preference right area leasing is outside the scope of this EA. The BLM has determined that if the RD&D project is proven successful, and EIS will be prepared to analyze impacts before approving an expanded commercial project in the preferential leasing Area. Lacking any reasonable information about the form of potential commercial development, BLM can not analyze in detail such potential actions at this time. A legal description of the preference right area can also be found in the publicly available databases such as LR2000.
P-16	WRA-7m WRA-7o	The EA attempts to improperly tier to the Programmatic EIS and the White River RMP Amendment, and relies on the EIS for commercial	The actions proposed in the three EAs for Oil Shale RD&D, as well as cumulative impacts to the Resource Area, are tiered to the White River RMP/EIS and are within the scope and analysis

**TABLE 4-NEPA Procedural
RESPONSES TO COMMENTS FOR NEPA PROCEDURAL AND SCOPE CONCERNS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
		leasing and the White River RMP for oil and gas development.	of the existing RMP/EIS.
P-17	WRA-10 WRA-4e WRA-14a	BLM should prepare a single NEPA document for the RD&D leasing program, to acknowledge it as a coordinated RD&D leasing program with concurrent impacts.	BLM is analyzing 5 individual, independent RD&D proposals. Each project employs a different new technology, and thus the proposals are not the same project with the same impacts. Separate NEPA documents enabled BLM to focus and include more detail on the individual proposals than would be practicable in a single, collective document. It is appropriate for BLM to analyze the impacts of approving each individual project as well as the cumulative impacts of all 5 proposals. Furthermore, BLM determined separate documents could be prepared more efficiently utilizing third party contractors with BLM staff providing supervision and oversight.
P-18	WRA-11a WRA-11b WRA-11c WRA-11d WRA-14b Tobin-2	BLM should prepare an EIS for the RD&D leasing projects because the actions amount to adoption of a new program, and an EIS is required for new programs under NEPA, especially those considered unanalyzed previously under NEPA, or that are controversial. Commentors also state that an EIS would facilitate sound long-term planning and resource management and benefit the public. One commenter suggested a basin-wide EIS that addresses cumulative impacts of mining and drilling would be more appropriate.	Section 369(c) of the Energy Policy Act of 2005 required BLM to issue leases for the purpose of research and development. BLM has determined that the small scale and limited duration of Research Development and Demonstration leasing analyzed in the EA does not constitute a new "program" nor does it meet the conditions established under NEPA for conducting an EIS. BLM has anticipated and minimized to the extent possible the likely impacts of the proposed actions. BLM has determined if a RD&D project is proven successful, an EIS will be prepared to analyze impacts before approving an expanded commercial project. Furthermore, the Oil Shale and Tar Sands Programmatic EIS is analyzing the impacts of creating a commercial oil shale leasing program.
P-19	WRA-11e	BLM did not consult with state regulatory authorities or local governments.	Throughout the NEPA process, BLM consulted frequently with state and local regulatory authorities and governments. The EA

**TABLE 4-NEPA Procedural
RESPONSES TO COMMENTS FOR NEPA PROCEDURAL AND SCOPE CONCERNS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
			includes a list of partners and agencies consulted. In addition the BLM continues to coordinate with state and local agencies to determine appropriate permitting and monitoring requirements.
P-20	RBC-26	The report used for available data is nearly a year old and due to the increased oil and gas activity, the data is underestimated.	BLM used the best available information during its analysis.
P-21	WRA-9k	The EA does not indicate whether permits from the Colorado Department of Public Health and Environment or Colorado Division of Water Resources will be obtained, in contravention of NEPA.	The July 27, 2006 EA (Page 59) states that EGL would obtain and comply with all applicable federal and state permits and comply with all applicable water quality permitting requirements. Examples of permits to be obtained are provided in Attachment A of this table. Agencies are continuing to develop actual permit requirements to address oil shale RD&D.
P-22	CDOW-2d	Realty actions could create management challenges due to intensity of industrial activity in the area.	BLM gives equal priority and expects proponents to work out conflicts whenever possible.
P-23	CDWR-3 CDWR-4	Compliance with stormwater discharge permit requirements was requested, as well as permits for jurisdictional dams if applicable.	EGL will obtain all necessary federal and state permits including stormwater permits during construction and operation. The Plan of Operations details that no jurisdictional dams will be constructed for the project.
S-1	WRA-12	In allowing RD&D Lessees to tie up 5,120 acres, BLM is ensuring that the American public will not receive the full potential value of the preference right areas. By prohibiting the top-filing of the preference right areas for commercial leases during the 10-year term of the RD&D lease, the BLM is decreasing the fair market value of the preference right areas.	Concerns addressing development of the preference right area leasing is outside the scope of this EA. BLM has determined if a RD&D project is proven successful, an EIS will be prepared to analyze impacts before approving an expanded commercial project in the preferential leasing area.
S-2	RBC-28	The ability for Rio Blanco to provide the matching	Energy company refusal to pay County use tax is outside the

**TABLE 4-NEPA Procedural
RESPONSES TO COMMENTS FOR NEPA PROCEDURAL AND SCOPE CONCERNS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
		funding is constrained by the fact that some energy companies refuse to pay County use tax.	scope of this EA.

**TABLE 4 - Reclamation
RESPONSES TO COMMENTS FOR RECLAMATION**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
R-1(similar to WT-1)	CDOW-2	Plans for land reclamation and weed mitigation should be created and BLM and CDOW consulted. Reclamation success should be evaluated on an annual basis. CDOW recommends developing management plans for wildlife habitat enhancement, reclamation and noxious weed treatment prior to ground disturbing activities.	Reclamation plans and Noxious weed treatment plans were developed in coordination with CDOW. Because the project is currently in the RD&D stage, it has been agreed upon by both CDOW and BLM to develop off-site mitigation for big game if the in-situ process used is deemed economically and environmentally feasible. At that time a comprehensive off-site mitigation strategy would be developed by BLM and CDOW for commercial development of oil shale resources.
R-2 (similar to WT-1)	CDOW-4 CDOW-4a	Reclamation recommendations are provided in comments.	BLM found consistency between the procedures recommended by CDOW and mitigation measures proposed in the EA. Because the project is currently in the RD&D stage, it has been agreed upon by both CDOW and BLM to develop mitigation for big game if the in-situ process used is deemed economically and environmentally feasible. At that time a comprehensive off-site mitigation strategy would be developed by BLM and CDOW for commercial development of oil shale resources.
R-3	RBC-21	Consider establishing a topsoil borrow area on the 21 acres of Forelle loams (that are identified in the EA as potential prime farmland if irrigated). At a minimum, protect these soils from compaction if needed for reclamation.	There are no prime farmland soils impacted by any of the five proposed actions. On EGL page 26, it is stated that soils meeting the requirement for prime farmland are not irrigated and unlikely to be irrigated in the future. In addition, not all of the soils within the tract will be disturbed, and not all the Forelle loams identified on the site will be disturbed. However, BLM will require mitigation measures to minimize impacts to topsoils. Where grading and surface disturbance are to occur, topsoil will be stripped to a depth of 6 inches or the A Horizon and preserved. During reclamation, soils will be returned to their pre-construction locations and contours.
R-4 (similar to	RBC-22	Recommend that final site reclamation site plan be	BLM reviewed the commenter's request and determined that the

**TABLE 4 - Reclamation
RESPONSES TO COMMENTS FOR RECLAMATION**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
WT-7)	CDOW-4a	amended to include water features for wildlife and/or livestock through grading and drainage catchments. Suggestion had been provided to develop onsite mitigation with close monitoring conducted by CDOW.	mitigation and reclamation measures are appropriate to reduce and minimize impacts to insignificant levels. The commentor has not identified an impact or established need that the recommended habitat enhancement feature would help address. BLM has ensured the project will avoid any unauthorized incidental 'take' of protected species and will restore the site to pre-construction conditions.

**TABLE 4-Socioeconomics
RESPONSES TO COMMENTS FOR SOCIOECONOMICS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
Socio-1	Ran-1	Socioeconomics section needs to more accurately describe housing vacancy rates and cumulative impacts of workforce and housing in Rangely. Rangely has not had a vacancy rate above 3-4% for last five years	The EA states (page 101) that socioeconomic statistics are often subject to reporting delays of a year or two after the fact. Consequently, socioeconomic effects of the recent increase in energy development that has occurred in northwest Colorado are not fully reflected in most published statistics. The most recent statistical data was used in the analysis and this information was augmented with interviews with local officials and service administrators. Colorado State Demography Office statistics indicated that during 2004 the housing vacancies for Meeker and Rangely were 13 and 17 percent respectively (Pg. 104, Socioeconomics). The EA goes on to recognize that according to local authorities "There were virtually no vacant rental units in Rangely during the fall of 2005 (Pg.104, Socioeconomics), and clearly illustrates the cumulative impacts of an increase in the workforce on housing throughout Rio Blanco, Garfield, and Mesa Counties.
Socio-2	RBC-34	The county contends the rural/agricultural character of the landscape is already changing due to energy development. The wording in the document says that oil shale and oil and gas development could change that landscape.	BLM has reviewed and considered the comment. In BLM's view, the EA accurately portrays the changing rural/agricultural characteristics of the county.
Socio-3	Klu-7 RBC-2	Commentors indicate the socioeconomic section underestimates the impacts to Rio Blanco County and that not only will postponement of royalties will be a problem but the federal government should compensate the county for lost revenue because impact fees for RD&D do not apply.	The request is beyond the purview of BLM's authority. However, the BLM has every intention to continue its close coordination with Rio Blanco County and to facilitate communication to the maximum extent possible between the companies and the County.
Socio-4	RBC-35	Further consideration of mitigation measures to	BLM reviewed the commenter's request and determined that the

**TABLE 4-Socioeconomics
RESPONSES TO COMMENTS FOR SOCIOECONOMICS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
		mitigate socio-economic impacts is needed.	identified mitigation and reclamation measures are appropriate to reduce and minimize impacts to insignificant levels.
Socio-5	RBC-3	BLM should locate housing on federal land.	BLM has the authority to consider a temporary use authorization for such an action, but the agency has determined it is unwarranted in this case.
Socio-6	RBC-30	The county disputes the statement on page 115 that the proposed RD&D projects" as well as cumulative impacts to the Resource Area... are within the scope and analysis of the existing RMP/EIS". Although it is within the acreage totals, the EIS did not appropriately address the socio-economic impacts.	The action is within the scope of the current RMP. It is true that the socio-economic data used in the RMP does not reflect recent energy development. Accordingly, an Environmental Impact Statement for the White River Resource Area is being prepared that will address the socio-economic impacts from the recent surge in energy development with an expected completion date of 2008.
Socio-7	CDOW-1	The socioeconomic analysis evaluates impacts to humans but does not consider wildlife values or their economic value to CDOW.	BLM manages habitat for wildlife, and the EA adequately characterized the impact the EGL RD&D project would have to wildlife habitat. Appropriate mitigation measures have been proposed to minimize any impacts to wildlife or wildlife habitat. Accordingly, any economic impact related to wildlife or wildlife habitat will be minimized to insignificant levels. In their comment, CDOW did not provide data regarding wildlife value for inclusion in the socioeconomic section of the report.

**TABLE 4 – Transportation/Access
RESPONSES TO COMMENTS FOR TRANSPORTATION/ACCESS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
TA-1	RBC-1 RBC-18	BLM should require mandatory car pooling and busing of employees; BLM should require companies to contribute to the cost of maintaining roads. Disagrees with EGL EA statement (page 22) that roads would not require upgrades.	Requiring mandatory car pooling or busing is beyond the purview of BLM's authority, however, the BLM has every intention to continue its close coordination with Rio Blanco County and to facilitate communication to the maximum extent possible between EGL and the county regarding road maintenance. The EA does recognize that roads will require ongoing maintenance. BLM intended to convey that no new road construction or major upgrades were anticipated to facilitate access the EGL RD&D site.
TA-2	RBC-9	Spill Prevention, Control and Countermeasures (SPCC) need to apply to oil transports in addition to wastes and hazardous materials.	SPCC will address wastes, hazardous materials and petroleum products.
TA-3	Klu-7	Additional vehicle trips and other transportation estimates seem low.	Regarding the number of vehicle trips, the EGL RD&D would be accomplished in phases with drilling first and construction later. EGL provided estimates of personnel requirements and consequent traffic volumes during the phases of operation based on the level of activity anticipated.
TA-4	RBC-23	Table 20 - clarify when the CDOT statistics were gathered.	The CDOT statistics were accessed via website in 2006, and use their most recent data, which was 2005. The data source for information provided by Rio Blanco County is 2005. The Table footnote will include this info. BLM also notes that the traffic along Piceance Creek Road was provided as a range, with the high number coinciding not only with hunting season but with construction of two major pipelines (Entrega and WIC) underway in that time period.
TA-5	RBC-33	In the cumulative impact section, recognize that increased traffic results in more accidents requiring	The socioeconomics section (EGL at 127) recognized that social infrastructure has not been able to keep up with the rapid growth

**TABLE 4 – Transportation/Access
RESPONSES TO COMMENTS FOR TRANSPORTATION/ACCESS**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
		emergency response and add reference to this in the Access Section on p.123.	in the oil and gas industry and demands upon emergency response services. The EA states that the proposed oil shale RD&D projects would contribute to these demands on local resources. The concept will be duplicated into the Access Section as requested.

**TABLE 4-Wildlife
RESPONSES TO COMMENTS FOR WILDLIFE**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
W T&E-1	RBC-19	Regarding Section 7 consultation, a commenter asked for more detail on the "streamlined Biological Opinion".	BLM and the USFWS have an existing agreement addressing consultation for the endangered Colorado River Fish. The USFWS issued a programmatic biological opinion to BLM in June 1994 for all small water depletions caused by BLM authorized activities in the Colorado River Basin. The USFWS has tiered the biological opinion issued for the RD&D projects to that programmatic biological opinion, thereby streamlining the work necessary to complete the consultation process. ESA section 7 consultation with the USFWS was concluded in a formal letter of concurrence with the findings of the biological assessments for all 5 of the proposed RD&D projects sent to the BLM on September 12, 2006. The USFWS found that the estimated water requirements listed fall under the umbrella of the USFWS Biological Opinion (ES/GJ-6-CO-94-F0170 for small water depletions.
WT-1	CDOW-3 CDOW-3a CDOW-4b CDOW-4d CDOW-6a	Comments concerning wildlife habitat loss were received, mostly on the affects to big game such as mule deer and elk. Concern was expressed that increased activity in the area might displace/disrupt big game. Requests were made for baseline data and consideration of off-site mitigation.	Surface disturbing activities would be limited to approximately 36 acres on the 160-acre tract. BLM found consistency between the procedures recommended by CDOW and mitigation measures proposed in the EA. Because the project is currently in the RD&D stage, it has been agreed upon by both CDOW and BLM to develop off-site mitigation for big game if the in-situ process used is deemed economically and environmentally feasible. At that time a comprehensive off-site mitigation strategy would be developed by BLM and CDOW for commercial development of oil shale resources.
WT-2	CDOW-4c	Development can move animals into lands already supporting population of animals. These effects are	BLM cannot assume effects will be additive without reliable information regarding current habitat condition, dispersal

**TABLE 4-Wildlife
RESPONSES TO COMMENTS FOR WILDLIFE**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
		additive and further reduce the quality of the habitat and available forage.	mechanisms and dispersal rates, population dynamics including variation in population size, sex-age composition, reproduction and mortality rates. Because of the anticipated duration of the project and the proposed amount of acres disturbed (i.e. 35 acres), affects to big game seasonal movement patterns will likely be minimal. In addition, reclamation efforts will emphasize native species and restoring forage value. Restoration efforts are designed to enhance forage value.
WT-3	CDOW-3b	Commenter was concerned with affects to sage grouse in adjacent areas.	Based on 2006 data provided by the CDOW, the nearest active leks are approximately 10 miles southwest of the project area. The closest suitable mapped sage grouse range is approximately 4 miles to the southwest of the site. No significant impacts to sage grouse are anticipated.
WT-4	CDOW-5 CDOW-5a	Comments on affects to wildlife from warmth generated from the facilities, and had commented that no fencing had been proposed by EGL to keep wildlife away.	The EGL EA (page 10) indicates the test area would be fenced to keep out wildlife and cattle. This would prevent the 'snuggle up' effect mentioned in the comment. No perimeter fence around the 160 is proposed due to BLM request to minimize impacts to adjacent grazing lessees.
WT-5	CDOW-7	Concerned with indirect affects on migratory or mobile species being many times greater than actual area of surface disturbance, and to consider the larger area of industrial development.	The cumulative impacts analysis was comprehensive and appropriate given available information and reasonably foreseeable activities. The actions proposed in the three EAs for oil shale RD&D, as well as cumulative impacts to the Resource Area, are tiered to the White River RMP/EIS and are within the scope and analysis of that document. A separate EIS will be prepared to analyze impacts of an expanded commercial project before approving the larger preferential lease area.

**TABLE 4-Wildlife
RESPONSES TO COMMENTS FOR WILDLIFE**

GENERAL THEME COMMENT	SPECIFIC COMMENTS ADDRESSED	COMMENT SUMMARY	RESPONSE
WT-6	CDOW-6	Mancamps were proposed but effects on wildlife not analyzed.	EGL page 9 indicates a mancamp is not contemplated for the test phase but workers whose presence may be required for extended non-routine testing might be temporarily housed in trailers. The potential direct, indirect, and cumulative impacts of project employees has been analyzed.
WT-7	EGL-1	Some of the mitigations are unnecessary to prevent significant impact and could cause unintended additional environmental impacts and may also increase the overall length of any environmental impacts by extending the duration of the RD&D operational period. Questioned 5 specific timing limitations associated with raptors and big game.	<p>The July 27, 2006 EA Table 11 presents information regarding biological surveys completed in 2006. No T&E or BLM sensitive species were observed at the site, and the site does not fall within severe winter range that would cause winter restrictions. Currently, no application of NSO or timing limitations are anticipated, however, surveys will need to be completed prior to construction to confirm the presence or absence of special status species.</p> <p>In the event that surveys identify species are present, BLM has determined that the mitigation and reclamation measures described in the EA are appropriate to reduce and minimize impacts to insignificant levels. BLM has ensured the mitigation measures are consistent with those prescribed in the White River Resource Area RMP. BLM has further ensured the project will avoid any unauthorized incidental 'take' of protected species and will restore the site to pre-construction conditions.</p>

**Table 4 Attachment A – NEPA Procedural
Anticipated Permits, License, and Plans
For Shale Oil Research Programs**

<u>Federal Permits or Authorizations</u>	Bureau of Land Management: <ul style="list-style-type: none"> - Oil Shale RD&D Lease - Federal Rights-of Way - NEPA Compliance
	Environmental Protection Agency: <ul style="list-style-type: none"> - EPCRA Planning and Reporting - EPCRA Risk Management - Hazardous Waste Generator Number - Spill Prevention, Control and Countermeasures (SPCC) Plan - Underground Injection Control (UIC) (depending on UIC required 6 months to 1 year)
	Federal Communication Commission: <ul style="list-style-type: none"> - Radio Permit
	Department of Transportation <ul style="list-style-type: none"> - Hazardous Materials Registration
	Occupational, Safety, and Health Administration: <ul style="list-style-type: none"> - Process Safety Management
<u>State Permits of Authorizations</u>	Colorado Air Pollution Control Division: <ul style="list-style-type: none"> - Air Pollutant Emission Notice (APEN) - (APEN) Construction Permit
	Colorado Department of Labor and Employment: <ul style="list-style-type: none"> - Storage Tank Permits
	Colorado Division of Minerals and Geology (CDMG): <ul style="list-style-type: none"> - 112d-3 Operation Reclamation Permit

	(4 months up to 1 year)
	Colorado Division of Water Resources / Office of the State Engineer: <ul style="list-style-type: none"> - Water Well Permits - Dam Safety Permit - Water Appropriations
	Colorado Water Quality Control Division: <ul style="list-style-type: none"> - Colorado Discharge Permit System (CDPS) Permit - Storm Water Permit – Construction - Storm Water Permit – Industrial - Wastewater Permit
<u>County Permits and Authorizations</u>	Rio Blanco County Development Department: <ul style="list-style-type: none"> - County Special Use License - Traffic Management Plan - Sanitary Wastewater Permit - Right Of Way Access Permit - Building Permit - Open Burn Permit

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
McC-1	Comment: Lighting in the Piceance area should be directed lighting with minimal light pollution impact.	Visual
Ran-1	Comment - Socioeconomics section needs to more accurately describe housing vacancy rates and cumulative impacts of workforce and housing in Rangely. Rangely has not had a vacancy rate above 3-4% for last five years.	Socioec
Klu-1	Comment: Figure 4 from Taylor suggests deep recharge, shallower recharge seems more appropriate.	Groundwater
Klu-2	Comment: Potential decomposition of carbonate minerals should be quantified during RD&D phase.	Air Quality
Klu-3	Comment: Amount and composition of produced gas should be quantified during RD&D.	Air Quality
Klu-4	Comment: Retorting will significantly increase the solubility of selected trace elements. In-situ production of organic compounds is not addressed.	Groundwater
Klu-5	The time required for pumping and treating of groundwater to meet applicable standards may be longer than the operator or regulators anticipate.	Groundwater
Klu-6	Comment: Post-production transmissivity lower than pre-production transmissivity seems odd.	Groundwater
Klu-7	Comment: Socioeconomics underestimate impacts to RBC and postponement of royalties will be a problem. Additional vehicle trip estimates seem low. Should front load local governments with royalties.	Socioec
RBC-1	General Comment: BLM should require mandatory car pooling and busing of employees; BLM should require companies to contribute to the cost of maintaining roads.	Transportation/Access
RBC-2	Comment: Federal government should compensate the county for lost revenue because emergency impact fees for RD&D do not apply.	Socioec
RBC-3	Comment: BLM should locate temporary housing on federal land.	Socioec
RBC-4	Comment: Inquired if any of the heating fluids are toxic.	Groundwater
RBC-5	Comment: Asked if the air quality analysis include flaring if the gas can't be utilized.	Air Quality
RBC-6	Comment: Asked if retort gas used to fire the boiler will require treatment.	Air Quality
RBC-7	Comment: What will the groundwater restoration criteria be? Is it technically feasible to meet them? Would restoration to baseline be more realistic?	Groundwater
RBC-8	Comment: Table 1 discrepancy - anticipated oil and gas production does not match the mining plan's estimate of 560,000 bbls/acre - Please clarify if the estimates were based on reserves or yield.	EA edit
RBC-9	Comment: SPCC stipulations need to apply to oil transports in addition to wastes and hazardous materials.	Transportation/Access

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
RBC-10	Comment: Consider on-site disposal of retort water rather than trucking to a licensed facility.	Surface water
RBC-11	Comment: Asked question about the origin of the Standards for Public Land Health and the implication of critical vs. non-critical elements.	Procedural
RBC-12	Comment: Questioned is PM10 values include PM2.5 values (i.e., are they additive?)	Air quality
RBC-13	Comment: Questioned the results of trenching vs road traffic values regarding PM 10 and PM 2.5 in Table 4. What is the source used?	Air quality
RBC-14	Comment: On p 14, there is discussion about occasional levels of ozone approaching federal standards. The respondent questioned if other local sources other than regional transport or stratospheric ozone subsidence contribute to this condition.	Air quality
RBC-15	Comment: Questioned if the air pollutant model assumed control of particulate sources and, if so, at what effectiveness.	Air quality
RBC-16	Comment: On p.20, first full paragraph, questions how the statement that PM concentrations are <i>well</i> below NAAQS when values are nearly the same (i.e., 147 vs 150).	EA edit
RBC-17	Comment: Table 5 suggests that the 24-hour direct PM10 concentration level would be greater than the 24-hour background level, yet the predicted direct annual concentration would be a smaller fraction of the annual background - please explain.	Air Quality
RBC-18	Comment: In the proposed action with mitigation, they strongly endorse the requirement to "appropriately surface" all roads and well locations and further endorse use of dust inhibitors on roads.	Transportation/Access
RBC-19	Comment: Regarding Section 7 consultation, what is a "streamlined Biological Opinion".	Wildlife T&E
RBC-19a	Comment: BLM should monitor EGL's compliance with the proposed mitigation measures to ensure that no degradation of Black Sulphur Creek occurs as a result of EGL's operations.	Surface water
RBC-19b	Comment: Water-yielding sections of the Quaternary alluvium, the most likely supply for potential future water wells for livestock and domestic use, should be protected during drilling and well completion.	Groundwater
RBC-20	Comment: Is the R5 an aquitard or a conduit for contaminant flow? Down-gradient multi-level monitoring wells should be completed across the "leach zone" interval of the Lower Parachute. The proposed production zone and leached zone should be shown on Figure 5.	Groundwater
RBC-20a	Comment: A detailed groundwater monitoring program specifying the sampling frequency, intervals, methods, etc. and complete list of parameters to be analyzed should be submitted at least 60 days before any production wells are drilled.	Groundwater

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
RBC-21	Comment: consider establishing a topsoil borrow area on the 21 acres of Forelle loams (potential prime farmland if irrigated); at a minimum protect these soils from compaction if needed for reclamation.	Reclamation/ Restoration
RBC-22	Comment: Recommend that final site reclamation site plan be amended to include water features for wildlife and/or livestock through grading and drainage catchments.	Reclamation/ Restoration
RBC-23	Comment: Table 20 - clarify when the CDOT statistics were gathered.	Transportation/Access
RBC-24	Comment: The groundwater monitoring plan should take into account significant faults within the vicinity of the test site.	Groundwater
RBC-25	Comment: Text on p. 93 should include the fact that the Rio Blanco County ambient noise standard is 65 dba; the activity will be consistent with county standards.	EA edit
RBC-26	Comment: The report used for available data is nearly a year old and due to the increased activity in oil and gas activity, the data is underestimated.	Procedural
RBC-27	Comment: DOLA grant generally require a match;	EA edit
RBC-28	Comment: The ability for Rio Blanco to provide the matching funding is constrained by the fact that some energy companies refuse to pay County use tax.	Scope
RBC-29	Comment: The premise of using acreage disturbed in relation to the total acreage in the WRRRA is misleading; the county would like to see Table 30 expanded to identify the known or projected workforce associated with the various activities/developments.	Procedural
RBC-30	Comment: The county disputes the statement on page 115 that the proposed RD&D projects "as well as cumulative impacts to the Resource Area... are within the scope and analysis of the existing RMP/EIS". Although it within the acreage totals, the EIS did not appropriately address the socio-economic impacts.	Socioec
RBC-31	Comment: Will BLM perform or require oil shale companies to monitor acid neutralizing capacity at Trappers and Ned or Upper Ned Wilson Lakes to ensure thresholds are not being exceeded?	Surface water
RBC-32	Comment: When is CALPUFF available and will BLM redo the modeling completed for this impact analysis using CALPUFF?	Air Quality
RBC-33	Comment: Increased traffic results in more accidents requiring emergency response. This needs to be included in the Access Section on p.123	Transportation/Access
RBC-34	Comment: The county contends the rural/agricultural character of the landscape is already changing due to energy development. The wording in the document says that oil shale and oil and gas development could change that landscape.	Socioec
RBC-35	Comment: Further consideration of mitigation measures to mitigate socio-economic impacts is needed.	Socioec

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
EGL-1	Comment: Some of the mitigations are unnecessary to prevent significant impact and could cause unintended additional environmental impacts and may also increase the overall length of any environmental impacts by extending the duration of the RD&D operational period. Questioned 5 specific timing limitations associated with raptors and big game.	Wildlife Terrestrial
Cha-1	Comment: Generally opposed to oil shale development.	None
Fry-1	Comment: Did air analysis look at H2S emissions being flared and in the boiler?	Air Quality
Fry-2	Comment: The EGL BLM RD&D process/project has unresolved environmental problems with gas cleanup, downstream raw oil disposal, lost oil/gas containment, use of alternative heating fluids, and recovery, and residual char contamination of the environment.	Procedural
Fry-3	Comment: The gas cleanup and oil disposal problems can be rectified with money - is EGL prepared to pay the cost.	Procedural
Fry-4	Comment: The quantity of char left behind to contaminate groundwater might be rationalized as acceptable on the basis that only 2 acres area involved and less than the 300 feet of oil shale formation will be pyrolyzed. However, on a commercial scale, the areas will be larger, groundwater quantities too large, and the cost of cleanup too high to be tolerated. Leaving char subsurface to serve as a perpetual groundwater contamination source of the Colorado River basin will be unacceptable to the public.	Procedural
Fry-5	Comment: The EGL process does not meet the acceptable requirements of advancing oil shale technology, minimum and manageable environmental impact and its economic viability depends on: 1) never having to incur the cost of cleanup, and 2) being able to high-grade the nations liquid/gas resource reserves as a consequence of coking much of the produced oil into enormous quantities of char.	Procedural
Fry-6	Comment: No process this far can beat the Black Box Pyrolysis Process when compared to the acceptable criteria.	Procedural
Wat-1	Comment: There is a high potential for oil that is generated from the retorting process to enter and contaminate the upper aquifer and higher sedimentary units. The upper aquifer is only semi-confined because of the nature of the lithological units above the shale oil horizons, and therefore lateral and vertical escape of oil-rich groundwater is not naturally controlled.	Groundwater

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
Wat-2	Comment: The EA may underestimate the amount of dry gas that would be produced which, along with carbon dioxide, may induce fracturing in the treated rocks. The greater permeability and hydraulic conductivity would make the production zone less confined and allow greater transmission of oil products and gas into the upper aquifer. This would cause aquifer contamination and possibly create a hazard to workers. Wells should be constructed to detect and monitor changes in gas types and pressures, and changes in oil content on water quality in units above and surrounding the retorted oil shale horizons.	Groundwater
USGS-1	Comment: Monitoring plans for the various RD&D leases should have similar designs, monitored parameters, data collection techniques, analytical protocols, and quality assurance. The groundwater monitoring plan should define water bearing zones monitored, number and locations of wells, frequency of monitoring, constituents to be monitored, and analytical methods.	Groundwater
USGS-2	Comment: Upon retorting, what happens to the physical properties of the oil shale and what impact would changes in physical properties have on fluid transport to the product recovery wells?	Groundwater
USGS-3	Comment: What is the basis for estimate of water production? Are any estimates of the retort water quality available?	Groundwater
USGS-4	Comment: Could dewatering wells draw contaminants from the retort zone and could these contaminants then be reinjected downgradient? Would dewatering cause upward movement of groundwater from the lower aquifer?	Groundwater
USGS-5	Comment: What is the plan for temporary storage of waste water between truck shipments? Reclamation activities are not defined in the project description. Hydrocarbon or silicon-based heat transfer fluids need to be monitored for.	Surface water
USGS-6	Comment: What evidence suggests that, at this location, the saline part of the section is well below the base of R6? If nahcolite remains in significant quantities at the top of L5 at this RD&D site then generation of CO ₂ and degradation of water quality would be expected.	Mineral
USGS-7	Comment: What is known about baseline organic chemistry, dissolved gases, groundwater ages? Would dewater wells draw oil and gas and leachates away from the zone? Would dewatering wells isolate the system vertically as well as laterally?	Groundwater
USGS-7a	Comment: Are records available for Great Yellowstone Sulphur Creek #1?	Groundwater
USGS-8	Comment: The EA neither specifies what water-bearing zones would be monitored or number of wells planned or a map of the well array. EA does not indicate whether monitoring would occur prior to development to measure baseline conditions in the various water-bearing strata (Uinta, A and B groove, L5).	Groundwater

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
USGS-9	Comment: If a substantial quantity of breccia is present at the top of L5 at this site, what prevents significant degradation of water quality in the brecciated unit from byproducts of the retort process? Moreover such a breccia zone would present a pathway for heat to migrate laterally rather than through the overlying oil shale. Breccia beds within the R6 unit may also present problems if there is high permeability associated with them as heat and fluids may preferentially follow these units. In sec 25, T2S and R98W, about 3 miles east of this site, substantial breccia is present in L5 and breccia beds are present in R6.	Groundwater
USGS-10	Comment: The assessment of cumulative effects on water resources assumes that water and chemical movement would occur uniformly in the hydrogeologic section. It is more likely that water and chemical movement will occur preferentially in high permeability zones.	Groundwater
USGS-11	Comment: Remediation should include consideration of constituents that are not regulated by state ground-water quality standards.	Groundwater
USGS-12	Comment: It would be useful to define what hazards the heat-transfer liquids may pose if released into groundwater system.	Groundwater
USGS-13	Comment: How will EGL know when heating in the upper part of the Mahogany zone has reached an appropriate limit? What limit is necessary for protection?	Groundwater
USGS-14	Comment: Will core be collected and analyzed?	Groundwater
USGS-15	Comment: Would chemistry of extracted water be measured before injection?	Groundwater
USGS-16	Comment: Heating and dewatering may lead to an increase in fracturing at depth in the R6 and the Mahogany Zone. Such fracturing could increase the hydrologic connectivity among the water-bearing units of the Upper Parachute Creek Member, or even the connectivity with the Uinta bedrock aquifers.	Groundwater
USGS-17	Comment: Hydrofracturing could lead to increased connectivity between poorer quality, deeper waters and waters in overlying bedrock aquifers.	Groundwater
USGS-18	Comment: Fractures may carry heat and fluids into the overlying aquifer well before significant heating and retorting occurs in the Mahogany. How will this be monitored? If fractures associated with the graben 800 yards west of the site extend into the RD&D site, is it likely that these fractures may influence vertical movement of fluids generated by retorting at the site?	Groundwater
USGS-19	Comment: To what extent would conductive heating of rocks at base of production zone also extend downward into nahcolite deposits?	Groundwater
USGS-20	Comment: How competent is the R5 confining unit?	Groundwater
USGS-21	Comment: Post-production transmissivity will not necessarily be similar to or lower than pre-production, given that fracting will be done near base of production zone and that generation of CO ₂ could enhance mineral dissolution.	Groundwater

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
USGS-22	Comment: Would high pressures in reaction zone push oil/gas/leachates out of the reaction zone?	Groundwater
USGS-23	Comment: What are the long-term consequences of pump-and-treat in terms of surface disturbance and effectiveness of treatment?	Groundwater
USGS-24	Comment: Would dewatering wells isolate the system vertically as well as laterally?	Groundwater
WilSta-1	Comment: Emissions inventories associated with the near-field and cumulative impacts appear different. Neither analysis is based on an adequate emission inventory.	Air Quality
WilSta-1B	Comment: Emissions from the boiler must be based on the AP-42 emission factors for natural gas and fuel oil combustion and must include worst-case emissions estimates from burning these fuels. High ozone and PM ₁₀ require these pollutants be included in the analysis. Pollutant emissions in Table 4 of the EA are less than what was modeled separately by Stamper and Williams.	Air Quality
WilSta-1C	Comment: The PM emission rates for road traffic were questioned and it was requested that tailpipe emissions be included in the cumulative analysis. All emission sources should be included in the cumulative analysis.	Air Quality
WilSta-1D	Comment: It is requested that fugitive VOC, HAP and CO ₂ emissions be estimated for the retort process.	Air Quality
WilSta-1E	Comment: Questioned the emission estimates for flaring and the operational assumptions used to determine emissions associated with burning produced gas, natural gas, and produced oil. Quantify emissions from flaring.	Air Quality
WilSta-1F	Comment: No mention of emissions from other sources was provided such as storage tanks, pumps, compressors, or backup power generators.	Air Quality
WilSta-1G	Comment: Wanted to know what the power requirements would be for the electrical resistance heaters and other equipment.	Air Quality
WilSta-1H	Comment: Need to assess the increased air emissions from power plants in the region associated with the maximum electric power usage and include emissions in the air quality impact analyses especially the cumulative impacts.	Air Quality
WilSta-2	Comment: The cumulative modeling analysis must include all sources that impact Class I areas. The cumulative impacts analysis should have looked at a greater set of Class I areas. Coal-fired power plants were not modeled in the cumulative impacts analysis even when located 200-300 km and could impact Class I areas. Proposed coal-fired power plants (two mentioned) should also be included to determine impacts on Class I areas. The sources should also have included projected emissions from the oil and gas development.	Air Quality
WilSta-3	Comment: Cannot rely on the background monitoring data to reflect all existing sources unless it can be demonstrated that the impacts of all existing sources are reflected in the monitoring data and reflect maximum concentrations.	Air Quality

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
WilSta-4	Comment: Monitoring data has not been shown to reflect concentrations near the EGL project area.	Air Quality
WilSta-5	Comment: The near-field analysis indicates that Class II PSD PM10 and SO2 increments will be violated.	Air Quality
WilSta-6	Comment: Did not provide any analysis of the mitigation measures (Subalternative). No analysis was performed to verify that statements about Subalternative.	Air Quality
WilSta-7	Comment: Does not appear that BLM adequately assessed maximum cumulative near-field impacts. The maximum cumulative impacts are much less than the impacts predicted from operation of just the EGL project. Did not model total worst case emissions or did not evaluate pollutant concentrations at the receptors of maximum concentration. Resolve discrepancies.	Air Quality
WilSta-8	Comment: The cumulative visibility impacts at Flat Tops Wilderness Area will be significant. Low visitation months and visibility impairment provide for a less stringent visibility state or federal standard. Federal Managers and US Forest Service consider a 0.5 dv change to be a limit of acceptance. Cumulative visibility impacts worse than predicted because the evaluation did not include all existing and reasonably foreseeable air emission sources.	Air Quality
WilSta-9	Comment: The total nitrogen and sulfur deposition levels are expected to be significant. Results relied on unreasonably high thresholds.	Air Quality
WilSta 10	Comment: Failed to analyze impacts on other Class I Areas. There are other Class I areas that could be affected by the oil shale R&D project and additional reasonably foreseeable sources.	Air Quality
WilSta-11	Comment: Modeling should have used additional years of meteorological data. Enough meteorological data should be obtained to ensure that worst-case conditions are represented.	Air Quality
WilSta-12	Comment: Failed to include an analysis of VOC emissions or its impacts on ozone concentrations. The VOC emissions from the oil shale operations should have been assessed along with the other oil and gas development currently existing and reasonably foreseeable.	Air Quality
WilSta-13	Comment: Failed to include hazardous air pollutant emissions and impacts.	Air Quality
WilSta-14	Comment: There is no mention of CO ₂ emissions or other greenhouse emissions. Need to show that these cumulative emissions do not have a significant impact. Strongly urged to include an assessment of increased greenhouse gas emissions.	Air Quality
WilSta-15	Comment: Failed to provide or evaluate mitigation measures for the significant visibility and sulfur and nitrogen deposition impacts at Flat Tops or Class II SO ₂ . EGL must include a discussion and evaluation of mitigation measures to avoid or minimize these impacts.	Air Quality
APCD-1	Comment: Size of Boiler questioned.	EA edit

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
APCD-2	Comment: Modeling is deemed inadequate by the APCD. AERMOD results may significantly underestimate impacts at Dinosaur National Monument and Flat Tops Wilderness Class I areas.	Air Quality
APCD-3	Comment: Receptor grid is not adequate to determine long range impacts, the NPS recommends spacing of 1,400 for the Flat Tops Wilderness Area instead of the 2,000 meter spacing used.	Air Quality
APCD-4	Comment: A complete (NAAQS/CAAQS and PSD Increment) cumulative analysis was not completed for the Oil Shale RD&D Project. Table 31 impacts do not include existing sources beyond the five Oil Shale RD&D projects. Additionally cumulative impacts should be compared to both the NAAQS/CAAQS and applicable PSD increments.	Air Quality
APCD-5	Comment: Cumulative Impact Requirements - Modeling results for 24-hour and annual PM ₁₀ , 3-hour, 8-hour and annual SO ₂ in Table 5 exceed modeling significance levels. An impact analysis that includes the proposed source and all nearby sources as well as the applicable background concentration should be conducted to determine cumulative impacts.	Air Quality
APCD-6	Comment: The cumulative analysis should include all of the sources in the area not just the RD&D projects.	Air Quality
APCD-7	Comment: Potential cumulative visibility impacts exceeding 1.0 deciview change between 13 and 20 days per year at Flat Tops Wilderness Area is a significant adverse impact. Winter days, precipitation days or meteorology are not sufficient reasons to remove the days. The magnitude, frequency and duration of predicted changes should be reported.	Air Quality
APCD-8	Comment: The predicted visibility impacts and acid deposition data may change considerably if the appropriate modeling methodology is used to evaluate the predicted impacts (Comment 2) and all nearby sources were included in the Cumulative Impact Analysis (Comments 4 and 5).	Air Quality
APCD-9	Comment: Predicted impacts to air quality do not support the statement that "negligible adverse air quality impacts are likely to actually occur."	Air Quality
APCD-10	Comment: Reference for Impact Threshold from Fox, et.al., 1989 is questioned. Fox reference is no longer used by the U.S. Forest Service to evaluate deposition impacts.	Air Quality
APCD-11	Comment: The reference for drill rig emission factors are provided as Tier 1. APCD would expect EGL to operate drill rigs meeting the latest EPA standards for nonroad engines.	Air Quality
APCD-12	Comment: The SO ₂ emissions seem disproportionately high in relation to the NO _x and CO emissions. Research ways to reduce SO ₂ emissions.	Air Quality
APCD-13	Comment: The air permitting section on page 17 is incomplete.	Air Quality

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
APCD-14	Comment: APCD suggests further mitigation options be employed such as erosion control measures during construction activities, dust control during construction, control of bare dust areas during wind events and covers on topsoil and other stockpiles.	Air Quality
APCD-15	Comment: Colorado does implement and enforce the federal air quality standards for PM _{2.5} and 8-hour ozone through permitting and air quality plans. It is incorrect to state that EPA is solely responsible for implementing these standards.	Air Quality
APCD-16	Comment: Estimated PM ₁₀ concentration of 147 µg/m ³ is not "well below" the applicable NAAQS of 150 µg/m ³ , it is within 2%. Fugitive dust mitigation should be implemented to ensure the 150 µg/m ³ PM ₁₀ NAAQS is not exceeded.	Air Quality
APCD-17	Comment: APCD reiterates that the BLM must examine the air quality impacts of commercial scale operations before commercial construction is allowed to proceed.	Procedural
WRA-1	WRA-1 - Deficiencies in Project Description-page 3	
WRA-1a	Comment - The EA contains insufficient project descriptions and plan of operations. BLM should demand more specifics from EGL before authorizing lease.	Procedural
WRA-1b	Comment: The EA lacks a baseline hydrogeological study of water resources on the lease tract, as well as detailed information on the likely effects that a "boiling layer of oil" could have on groundwater resources or resulting transmissivity of the region.	Groundwater
WRA-1c	Comment - How does the "flooded reverse circulation" process minimize potential "lost circulating problems" in the Uinta formation?	Groundwater
WRA-1d	Comment - More information is needed about the long-term impacts to geohydrology and geomorphology before a FONSI can be issued.	Groundwater
WRA-1e	Comment - The EA identifies knowledge gaps regarding long term effects of pyrolysis.	Groundwater
WRA-1f	Comment: The EA fails to evaluate the impacts of hydraulic fracturing on the existing groundwater regime, and on the regime that will result once the oil shale resource has undergone pyrolysis.	Groundwater
WRA-1g	Comment: EA fails to completely discuss consumptive use of water and provides inconsistent water needs estimates.	EA edit
WRA-1h	Comment - EA emission inventory fails to address emissions from flaring including nitrogen oxides, carbon monoxide, and volatile organic compounds.	Air Quality
WRA-1i	Comment - EA fails to provide a sufficient legal description of RD&D tract and preference lease.	Procedural
WRA-2	WRA-2 - Deficiencies in Identifying Lease Terms	
WRA-2	Comment - The EA provides insufficient detail and analysis on lease terms and stipulations that will be attached to the oil shale RD&D leases.	Procedural
WRA-3	WRA-3 - Failure to comply with Piceance Basin RMP	

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA		
Comment Number	Issues Raised	Theme
WRA-3a	Comment - The EA fails to comply with White River Resource Area RMP by failing to analyze merits of technology and availability of alternate private lands for process testing.	Procedural
WRA-3b	Comment - The EA fails to establish the required environmental baseline describing carrying capacities for several resources in Piceance Basin RMP.	Procedural
WRA-4	WRA-4 - Failure to respond to Comments	
WRA-4a	Comment - BLM did not respond to comments submitted in January 2005 in response to Federal Register Notice 67935 (Nov. 22, 2004).	Procedural
WRA-4b	Comment - BLM did not respond to or address comments submitted in April 2006 in response to EA scoping meetings.	Procedural
WRA-4c	Comment: EA fails to provide sufficient discussion of lease terms that will address conversion of an RD&D lease into a commercial lease or how the agency will prevent undue or unnecessary degradation of resources.	Procedural
WRA-4d	Comment - EA does not contain a "response to comments" section.	Procedural
WRA-4e	Comment - BLM is perpetuating the notion that the five RD&D proposals are occurring as a foregone conclusion and in isolation rather than as a coordinated RD&D leasing program.	Procedural
WRA-4f	Comment: In particular WRA expressed concerns about the effects experimental in-situ oil shale development activities could have on water quality, especially on groundwater supplies. Questions were also raised questions about the potential mobility into groundwater of residual contaminants that would result both during the heating process and remaining after the process was completed...	Groundwater
WRA-5	WRA-5 - Impermissibly Narrow Definition of Purpose and Need	
WRA-5	Comment - BLM's decision to define the purpose and need for the project exclusively from EGL's perspective is contrary to NEPA.	Procedural
WRA-6	WRA-6 - Inadequate Range of Alternatives	
WRA-6a	Comment - The EA contains an inappropriately narrow range of alternatives in considering only two: the proposed action and the statutorily required no action alternative.	Procedural
WRA-6b	Comment - The EA contains alternatives that are simply a subset of measures and not an alternative at all.	Procedural
WRA-6c	Comment - BLM failed in its duty to conduct a comparative analysis among reasonable range of alternatives.	Procedural
WRA-6d	Comment - No action alternative was not examined at all. No further explanation given except 'no impacts would occur'.	Procedural
WRA-6e	Comment - BLM is required to ensure alternative methodologies receive analysis in the EA.	Procedural
WRA-6f	Comment - BLM has neglected to evaluate alternatives as required in the existing RMP including the availability of private land.	Procedural
WRA-7	WRA-7 - Inadequate Analysis of Cumulative Impacts	

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA		
Comment Number	Issues Raised	Theme
WRA-7a	Comment - The cumulative impact section is inadequate and fails to comply with NEPA. Needs to describe 'incremental impact of the action when added to other past, present, and reasonably foreseeable future actions'.	Procedural
	1. Improper geographic scope for analysis of cumulative impacts.	Procedural
WRA-7b	Comment - BLM fails to provide a rational reason for its decision to use a broad area (White River Resource Area) as the geographic scope.	Procedural
WRA-7c	Comment - The EA analysis only considers surface occupation, not other factors such as pollution, impacts to wildlife, and recreational users.	Procedural
WRA-7d	Comment: The EA includes a table that estimates the surface disturbance for past, present, and reasonably foreseeable future projects in the WRRRA, EA at 113-115, but it fails to provide any analysis of the impacts of these surface disturbances.	Procedural
	2. Failure to Evaluate Impacts of Commercial Properties on Preference Right Areas	Procedural
WRA-7e	Comment - BLM failed to consider the impact on the environment likely to result from commercial activities. BLM identified commercial development as a 'reasonably foreseeable' future activity, and the selection process stated that these technologies had the likelihood of advancing to commercial preference right. BLM therefore misstates the test for conducting cumulative impact analysis required under NEPA and should have analyzed the cumulative impacts of commercial oil shale activities.	Procedural
WRA-7f	3. Cumulative Impacts to Water Quality	Surface Water
WRA-7f	Comment - Relying on the White River Resource Area boundary as the limit to cumulative impact area is arbitrary in scope for water resource.	Procedural
	4. Cumulative Impacts to Air Quality	
WRA-7g	Comment - The EA improperly limits its cumulative impacts analysis to the potential impacts of the 5 RD&D projects and the 5,000-well Piceance Development Project, rather than all projects in Table 30.	Air Quality
WRA-7h	Comment - The EA identifies a potentially significant impact on visibility in the Flat Tops Wilderness Area. The EA attempts to improperly explain away this exceedance by explaining that the impact will occur during winter months when visitor use is "minimal"	Air Quality
WRA-7i	Comment - EA failed to consider potential cumulative impacts from power production needed to operate EGL facility and the potential increase in power needed for commercial operations.	Air Quality

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA		
Comment Number	Issues Raised	Theme
WRA-7j	Comment - The EA identifies maximum cumulative impacts for the Piceance Basin less than the impacts predicted from operation of just the EGL project. Maximum predicted SO ₂ , PM ₁₀ and PM _{2.5} impacts are higher for the EGL project modeling than for the cumulative modeling.	Air Quality
	5. Cumulative impacts from spills or leaks	Procedural
WRA-7k	Comment - EA is lacking detailed estimates of spills and leaks.	Procedural
	6. Cumulative impacts from other projects	Procedural
WRA-7l	Comment - The EA acknowledges there are reasonably foreseeable actions in the analysis areas that will have significant cumulative impacts but fails to analyze those actions.	Procedural
WRA-7m	Comment - The EA attempts to improperly tier to the Programmatic EIS and the White River RMP Amendment.	Procedural
	7. Failure to provide quantified and detailed information on cumulative impacts.	Procedural
WRA-7n	Comment - The EA fails to provide quantified and detailed information about potential cumulative impacts.	Procedural
	8. Improper Tiering	Procedural
WRA-7o	Comment - EA fails to conduct an evaluation of the cumulative impacts of other ongoing large-scale development proposals and relies on the EIS for commercial leasing and the White River RMP amendment for oil and gas development.	Procedural
WRA-8	WRA-8 Failure to Ensure Compliance with State and Federal Law	Air Quality
WRA-8a	Comment - BLM acknowledges that the direct impacts of the proposed action will cause violations under the Clean Air Act, yet it fails to acknowledge that this is a significant impact.	Air Quality
WRA-8b	Comment - BLM cannot ignore the results of this modeling analysis by stating simply that it is not a "regulatory PSD increment consumption analysis".	Air Quality
WRA-8c	Comment - BLM claims no violations of any air quality standards are expected to occur as a result of the mitigation measures in the subalternative, but the EA does not indicate any analysis to support this conclusion.	Air Quality
WRA-9	WRA-9 Comments on Water issues	Groundwater
WRA-9a	Comment: Baseline information has not been presented or adequately summarized in the EA. The absence of quantitative data renders the EA inadequate under NEPA.	Groundwater
WRA-9b	Comment - The EA does not provide details about the construction, operation, casing or lining of the underground heat transfer and hydrocarbon collection systems.	Groundwater

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
WRA-9c	Comment: There is minimal information provided about the means by which inter-aquifer hydraulic communications characteristics will be controlled to avoid project-caused undesired communication between aquifers. The EA's statement that transmissivity is "expected to be similar to or lower than pre-production" demonstrates the lack of solid information concerning the impacts to groundwater.	Groundwater
WRA-9d	Comment - The EA does not provide information regarding treatment of wells following closure.	Groundwater
WRA-9e	Comment - The EA fails to identify the sources of water required for drilling and operations.	Water Rights
WRA-9f	Comment - BLM needs to resolve potential conflict with barrels of water used per day. Page 90 states 27 bpd, page 9 states 50 barrels per day, and page 6 states 80 bpd required for drilling that would be purchased from local sources.	EA Edit
WRA-9g	Comment - The EA should indicate whether water sources have the legal and physical characteristics necessary to meet the project demand. The effect of water availability and potential injury to existing water rights needs to be assessed.	Water Rights
WRA-9h	Comment: The Colorado Water Conservation Board is developing an application for and instream flow right in Black Sulphur Creek near the vicinity of the project. The EA does not address this requirement.	Water Rights
WRA-9i	Comment - Potential impacts from dewatering are significant. The EA fails to provide an adequate description of the process details and analysis of impacts. The EA fails to address the impacts of mine dewatering on adjacent aquifers and surface water resources.	Groundwater
WRA-9j	Comment: The EA fails to provide details on the manner in which the pumping or re-injection will be done, and there is no analysis of the impact that the dewatering will have on the adjacent surface and subsurface water resources, both over the short and long-term.	Groundwater
WRA-9k	Comment: The EA does not indicate whether permits from the Colorado Department of Public Health and Environment or Colorado Division of Water Resources will be obtained, in contravention of NEPA.	Procedural
WRA-9l	Comment - The EA fails to provide adequate description of the dewatering monitoring plan.	Groundwater
WRA-9m	Comment-A detailed monitoring plan should be implemented to ensure proper identification of potential impacts to wetlands.	Surface water
WRA-9n	Comment: No detailed description of the monitoring program or estimates of its effectiveness in detecting negative impacts are provided.	Groundwater
WRA-9o	Comment: There should be a very detailed monitoring program to characterize the consequences of the fracturing process on the quality and hydraulic behavior of groundwater in these geological formations both before and after the extraction of hydrocarbons.	Groundwater

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
WRA-9p	Comment - The EA fails to analyze potential impacts from rock fracturing and heating and the potential to alter subsurface fluid flows and characteristics which may have adverse impacts on water quality.	Groundwater
WRA-9q	Comment - The impact of leakage of heating fluids on aquifer and local groundwater is not properly addressed in the EA.	Groundwater
WRA-9r	Comment: If only 80 percent of the base flows originate from groundwater sources, it is unclear where the other 20 percent of the base flow comes from.	Surface water
WRA-9s	Comment: The water quality data presented in the EA to characterize existing conditions in Black Sulphur Creek were collected between 1975 and 1981 – 25-30 years ago. The EA contains no information on actual sampling dates, the number of samples collected, the sampling locations(s) or the proximity of the sampling locations to the EGL tract.	Surface water
WRA-9t	Comment - The EA states that approximately 80 percent of base water flow in Piceance Creek. If only 80 percent of the base flow originates from groundwater sources, it is unclear where the other 20 percent of the base flow comes from.	Surface water
WRA-9u	Comment - The EA contains insufficient detail on Black Sulphur Creek sampling dates, methods, and collection sites.	Surface water
WRA-9v	Comment: The EA does not provide any information about water quality conditions in Ryan Gulch other than its “Use Protected” designation.	Surface water
WRA-9w	Comment - More current and thorough sample analysis data is needed to accurately characterize existing water quality conditions in Black Sulphur Creek and Ryan Gulch.	Surface water
WRA-9x	Comment - The EA fails to provide quantitative information or analysis demonstrating compliance with state water quality standards. No information is provided as to the nature of the contaminants that would cause these potential impacts.	Groundwater
WRA-9y	Comment - The EA fails to include details about the logs that must be kept of all substances brought onto the tract.	Procedural
WRA-9z	Comment - Considerable new research must be done to characterize the waste waters that will be produced by retorting.	Groundwater
WRA-9aa	Comment - Significant water quality impacts can result from the alteration of natural surface and groundwater systems associated with mining, dewatering and water supply activities. These impacts must be analyzed.	Groundwater
WRA-9bb	Comment: Residual retort water cannot be controlled and will remain in the environment indefinitely. The nature of this impact must be carefully analyzed. The EA fails to analyze the quality and quantity of retort waters.	Groundwater

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
WRA-10	Comment: BLM should prepare a single NEPA document for the RD&D Leasing Program. BLM cannot compare the various companies' plans for adequacy, technical value, resource conservation, or environmental analysis.	Procedural
WRA-11a	Comment: BLM should prepare an EIS for the RD&D Leasing Program. BLM should prepare an EIS because its actions amount to the adoption of a new program.	Procedural
WRA-11b	Comment: BLMs adoption of a new leasing program is the type of agency activity for which an EIS is required under NEPA and its implementing regulations.	Procedural
WRA-11c	Comment: BLM should prepare an EIS for the RD&D Leasing Program. An EIS would facilitate sound long-term planning and resource management.	Procedural
WRA-11d	Comment: BLM should prepare an EIS for the RD&D Leasing Program. The public benefits significantly from preparation of an EIS.	Procedural
WRA-11e	Comment: BLM did not consult with state regulatory authorities or local governments.	Procedural
WRA-12	Comments: In allowing RD&D Lessees to tie up 5,120 acres that BLM is ensuring that the American public will not receive the full potential value of the preference right areas. By prohibiting the top-filing of the preference right areas for commercial leases during the 10-year term of the RD&D lease, the BLM is decreasing the fair market value of the preference right areas.	Scope
WRA-13	Comment: The EGL EA does not include a "response to comments" section that is generally found in NEPA documents, it does not analyze alternatives that were suggested in comments, and it does not appear to have given these comments much consideration at all.	Procedural
WRA-14a	Comment: Issuance of oil shale RD&D leases could have a significant impact on the environment. BLM must consider the impacts of the various RD&D leasing proposals concurrently, rather than in isolation.	Procedural
WRA-14b	Comment: Issuance of oil shale RD&D leases could have a significant impact on the environment. The technologies proposed for use in the BLM's RD&D leasing program have never been subject to NEPA analysis before and thus they involve unknown impacts -- an "intensity" factor to be considered when evaluating whether to prepare an EIS. Another factor counseling preparation of an EIS is that the program is controversial.	Procedural
WRA-14c	Comment: Issuance of oil shale RD&D leases could have a significant impact on the environment. Because eventual commercial development of these leases and the preference right areas is reasonably foreseeable, these impacts must be assessed and evaluated.	Procedural

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
CDOW-1	Comment: The socioeconomic analysis evaluates impacts to humans but does not consider wildlife values or their economic value to CDOW.	Socioec
CDOW-2	Comment: Plans for land reclamation and weed mitigation should be created and BLM and DOW consulted. Reclamation success should be evaluated on an annual basis. CDOW recommends developing management plans for wildlife habitat enhancement, reclamation and noxious weed treatment prior to ground disturbing activities.	Reclamation
CDOW-2a	Comment: A Spill Prevention and Counter-measure Plan and Emergency Response Plan should be included in the EA.	Surface Water
CDOW-2b	Comment: 160 acre parcels aren't large but problems encountered would be magnified upon larger scale operations.	Scope
CDOW-2c	Comment: Detail is lacking in the EA that was found in the PO. Some details would make the EA analysis more complete.	Procedural
CDOW-2d	Comment: Realty actions such could create management challenges due to level of industrial activity in the area.	Procedural
CDOW-2e	Comment: Inclusion of DRAFT FONSI with a DRAFT EA is not common.	Procedural
CDOW-2f	Comment: Split estates could cause conflicts between mineral rights, priorities should be established. Production of nahcolite was not evaluated.	Mineral
CDOW-2g	Comment: Cumulative impacts of the Reasonably Foreseeable Development Scenario should be fully assessed.	Procedural
CDOW-3	Comment: Energy development should be managed such that no net loss to wildlife habitat occurs. Performance based objectives should be designed and implemented such that they maintain no net loss to habitat or species.	Wildlife Terrestrial
CDOW-3a	Comment: Four habitat conservation methods could be developed for mule deer, greater sage-grouse, and elk. Proposals would be developed by proponents and then measured and monitored through performance based objectives. Mitigation measures should be planned to balance habitat loss with habitat gain at a ratio of 3:1.	Wildlife Terrestrial
CDOW-3b	Comment: Sage-grouse in adjacent areas could be affected by the increase in disturbance and traffic. This should be monitored and mitigated.	Wildlife Terrestrial
CDOW-4	Comment: Reclamation recommendations are provided.	Reclamation
CDOW-4a	Comment: Onsite mitigation might be possible. Parameters of this type of mitigation should be closely monitored by CDOW. The onsite mitigation efforts should be additional to the site reclamation efforts described above.	Reclamation
CDOW-4b	Comment: Offsite mitigation recommendations are provided.	Wildlife Terrestrial

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
CDOW-4c	Comment: Development can move animals into lands already supporting population of animals. These effects are additive and further reduce the quality of the habitat and available forage.	Wildlife Terrestrial
CDOW-4d	Comment: Baseline wildlife studies should be conducted in advance of development. Offsite mitigation should be planned to offset habitat loss such that habitat gain can be accomplished if possible.	Wildlife Terrestrial
CDOW-5	Comment: The RD&D sites could be an attractive nuisance, provide warmth, and may cause 'snuggle up' effect. The commentor also indicated no perimeter fencing is proposed to exclude wildlife from operations.	Wildlife Terrestrial
CDOW-5a	Comment: Fences should be constructed around the facility perimeter and should be "wildlife-friendly".	Wildlife Terrestrial
CDOW-6	Comment: CDOW indicates mancamps were proposed but effects on wildlife not analyzed.	Wildlife Terrestrial
CDOW-6a	Comment: EGL site is located within mule deer winter range, adjacent to severe winter range. Site overlaps mule deer summer range. Habitat influences should be considered and mitigated.	Wildlife Terrestrial
CDOW-7	Comment: Indirect effects on migratory or mobile species can be many times greater than the actual area of surface disturbance. Consider indirect effects of road networks and industrial development of remote areas of NW Colorado.	Wildlife Terrestrial
CDOW-8	Comment: Water resources should be mapped and characterized, quantified before, during and after development, and protected from potential impacts from fracturing, heating, processing, etc. Water sample analytes were not proposed therefore it is difficult to ascertain whether baseline and monitoring samples will adequately assess water quality.	Surface Water
CDOW-8a	Comment: The EA does not disclose what constituents may be generated by insitu retorting and conversion of kerogen to oil.	Surface Water
CDOW-8b	Comment: An integrated groundwater and surface water monitoring and abatement plan should be developed prior to activities. A larger geographic area would likely be necessary to characterize baseline water quality data.	Groundwater
CDOW-8c	Comment: Water quality testing should include groundwater, springs, seeps, and surface water above and down gradient of the site.	Surface Water
CDOW-8d	Comment: Connectivity between aquifers has not been evaluated in detail.	Groundwater
CDOW-9	Comment: Priority of leasing (oil shale vs. oil and gas leasing) and the balance of multiple energy/mineral interests has not been addressed.	Minerals

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
CDOW-9a	Comment: Springs constitute the source of 80% of surface water. Maintenance of surface water flow quality and quantity is not ensured by a monitoring program only, and data in EA do not contain sufficient detail to ensure these resources will be protected.	Surface Water
CDOW-10	Comment: Oil shale development could be water intensive and may lead to depletions of ground and surface water. Water rights may be affected and should be addressed.	Water rights
CDOW-11	Comment: Baseline data should be collected and analyzed to ensure that any increasing acidity in Trapper's Lake is abated or mitigated to avoid adverse impacts to Colorado River Cutthroat Trout.	Surface Water
WQCD-1	Comment: Add note to EA that wells will meet minimum construction standards.	EA edit
WQCD-2	Comment: Additional details requested about cased well and horizontal to vertical connection.	Groundwater
WQCD-3	Comment: Requested MSDSs for Dowtherm and Syltherm in addition to Paratherm in the Plan of Operations.	Groundwater
WQCD-4	Comment: Question on local versus regional groundwater flow and locations of monitoring wells.	Groundwater
WQCD-5	Comment: Requested more detail on groundwater monitoring plan.	Groundwater
WQCD-6	Comment: Requested a reference to 5CCR1002-41 be added. Text to indicate it is required State groundwater quality standard that needs to be achieved.	EA edit
WQCD-7	Comment: Reporting requirement for spills to CDPHE. Requested the reporting requirement be in any revised EA or updated spill response plans.	Surface Water
WQCD-8	Comment: Stream Segment 16 language implies only standards for four parameters have been adopted instead of full suite which includes parameters not listed. Requested text modification.	Surface Water
WQCD-9	Comment: Same comment for Stream Segment 20 as Segment 16, be consistent in information provided.	Surface Water
WQCD-10	Comment: Inaccurate definition of Recreation Class 2 waters.	Surface Water
WQCD-11	Comment: Requested that estimates of the local thickness and extent of alluvial aquifers at the site be provided, and to include Qal in Figure 5 stratigraphic column.	Groundwater
WQCD-12	Comment: Requested text be revised to reflect higher TDS limit of 3,000 mg/L instead of TDS greater than 1,000 mg/L.	Groundwater
WQCD-13	Comment: The Commentor suggested text be revised to indicate that increased sediment loads would only occur if BMPs are not properly designed and implemented.	EA edit
WQCD-14	Comment: Insert "the potential for" in front of impacts.	EA edit
WQCD-15	Comment: Requested additional discussion on post-production transmissivity.	Groundwater

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
WQCD-16	Comment: Cumulative impacts discussion on stream impacts associated with construction runoff are appropriate when also indicating BMPs for erosion control would prevent impacts.	Surface Water
WQCD-17	Comment: It is the State's intent to meet the state-wide basic standards and not pursue site-specific water quality classifications and standards.	Groundwater
WQCD-18	Comment: Regarding Appendix A measures for Water Quality. WQCD has determined two permits will be required, stormwater discharges during construction, and stormwater discharges during operation. Doesn't appear there will be process discharge so no MINDI or individual permit needed. If process discharge is needed, it will require 180-day lead time.	Surface Water
CRBCA-1	Salinity concerns for Colorado River.	Surface water
Mil-1	Comment: There is a distinct risk that subsidence could occur during the operations phase.	Groundwater
Mil-2	Comment: Concerned about BLM not wasting resources, by leaving behind as unrecovered "heavy ends" of 40-50 million barrels. Methods should be improved before proceeding to a commercial lease.	Mineral
Mil-3	Comment: Request carefully designed monitoring systems. Long term monitoring needed to evaluate lateral, downward and upward leakage of groundwater into the retort and oil flowing toward dewatering wells. Also request sub-zone monitoring of the two layer aquifer system.	Groundwater
Mil-4	Comment: Lease terms to include adequate requirements for monitoring. Bonding suggestion to look at Federal lease C-a.	Groundwater
Mil-5	Comment: Requested a diagram. Felt the 50 bpd estimate of retort water was optimistic. Static ground water pressure gradient will be several hundred pounds per square inch (psi). Leakage of water will become contaminated. Problem can be evaluated by adequate testing.	Groundwater
Mil-6	Comment: Dewatering gradient, discuss whether oil could flow toward dewatering wells from retort.	Groundwater
Mil-6a	Comment: Details requested of groundwater monitoring (multi-level).	Groundwater
Mil-7	Comment: CO ₂ emissions could be significant from commercial scale.	Air Quality
Mil-8	Comment: Mahogany Zone (R-7) is major overall aquifer-separator zone. Vertical interaquifer flow. Could be higher than we anticipate, and data from Federal Lease tract C-a would support that.	Groundwater
Mil-9	Comment: Regarding TDS values in lower aquifer. EA states they could range up to 20,000 mg/l, comment is that the lower aquifer wouldn't have such a high TDS.	Groundwater
Mil-10	Comment: Dawsonite is widespread. Mentioning need to address effects on aluminum and bauxite. Must address impacts.	Mineral
CDWR-1	Comment - The proposed operation may have the potential to impact existing water rights. The EA must demonstrate that the proposed project will not alter or impact vested water rights.	Water Rights

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
CDWR-2	Comment - A plan for augmentation may be required to replace all water depletions in time, place and amount.	Water Rights
CDWR-3	Comment - If stormwater runoff is intercepted by this operation and not diverted or captured, it must be released to the stream system within 72 hours and may require a discharge permit from CDPHE-WQCD.	Procedural
CDWR-4	Comment – Jurisdictional-size dams must be approved by State Engineer prior to construction.	Procedural
CDWR-5	Comment - All water wells constructed for purposes of monitoring, dewatering, recharge, injection, and production must comply with state standards.	Groundwater
WRNF-1	Comment: Analysis of direct and indirect air quality impacts does not appear to have addressed all impacts to air quality related values in Class I areas such as the Flat Tops Wilderness. Not clear if a PSD increment analysis was performed for Class I areas. Request results of such analyses be included in the EA.	Air Quality
WRNF-2	Comment: Requested statements be removed from the EA that are resource value judgments regarding visibility impacts.	Air Quality
WRNF-3	Comment: WRNF stated that if the model is a conservative one, and that is the reason why the results are to be discounted, that a different model be used that is more accurate.	Air Quality
WRNF-4	Comment: Request the language in the EA be revised to accurately describe the visibility impact threshold. Currently states it to be anything 'greater than 1.0 deciview' and the threshold is anything "equal to or greater than 1.0 deciview'.	EA edit
WRNF-5	Comment: WRNF requested that the EA analysis include an assessment of visibility impacts of 0.5 deciview or greater and the results be disclosed in the EA.	Air Quality
Tobin-1	Comment: The Mahogany R-7 is a confining layer that prevents mixing of the aquifers, but could be affected by fracturing allowing more interaction.	Groundwater
Tobin-2	Comment: A Basin-wide EIS that addresses cumulative impacts of mining and drilling is appropriate.	Procedural
Tobin-3	Comment: Because of the hydrologic complexity in the basin, data and assumptions are not transferrable to multiple locations.	Groundwater
Tobin-4	Comment: Rio Blanco nuclear shot is located near the site and should be considered.	Mineral
Tobin-5	Comment: Figure 4 shows insufficient information regarding surface-groundwater flow systems in the area.	Groundwater
Tobin-6	Comment: BLM should check the reference used to support conclusion that the "upper aquifer contributions must be limited, given higher concentrations of sodium, bicarbonate, chloride, and TDS in that aquifer" (Page 53 and 54 of the EA).	Groundwater

TABLE 5 - PUBLIC COMMENTS RECEIVED ON EGL EA

Comment Number	Issues Raised	Theme
Tobin-7	Comment: Include a reference to Welder and Saulnier, 1978 in the discussion on page 56, third paragraph.	Groundwater
Tobin-8	Comment - The magnitude and duration of potential impacts to groundwater recharge will not be known until local hydrology is studied.	Groundwater
Tobin-9	Comment - The overall porosity and permeability of the fine-grained rock will not be known until the varied fracture hydrology of the basin is studied further.	Groundwater
Tobin-10	Comment - BLM needs to define "equivalent aquifer".	Groundwater
Tobin-11	Comment - A monitoring plan is needed during the dewatering process.	Groundwater
Club 20-1	Comment: Several positive comments.	Socioec