PLAN OF OPERATIONS

E.G.L. Resources, Inc
for
OIL SHALE RESEARCH, DEVELOPMENT AND DEMONSTRATION (R,D/D) TRACT

Submitted
to

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Submitted
by

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Executive Summary

EGL Resources, Inc. (EGL) is very excited about the opportunity to participate with BLM in this very important Oil Shale Research, Development and Demonstration (R,D/D) program We believe we have an innovative technology (the EGL Oil Shale Process – patent pending) and a unique approach to development that resolves the challenges of producing shale oil in a economic and environmentally acceptable manner.

This Plan of Operations (the "Plan") focuses on activities on the nominated 160-acre test tract (the Tract) However, we want to stress that our approach involves pre-operational research, testing, modeling and on-site assessments that will be instrumental in determining the precise activities that we conduct on the Tract to demonstrate our technology. Therefore we have included information in the Plan that is our best technical judgment at this time. As information is developed during our pre-operational activities, we will come to BLM periodically to review the work and if necessary make clarifications to the Plan.

The Plan includes all the minimum information required by BLM and additional information that we felt important to inform BLM of our anticipated activities. Because of the innovative nature of our technology, some of the information internal to EGL is proprietary to EGL, but nothing presented in this plan is proprietary. It may be released in whole or in part to BLM staff and the public as BLM may determine.

The Plan contains narrative, diagrams and maps that describe the Tract; the proposed project; drilling plan details; environmental aspects; reclamation plans and schedules; and abandonment procedures and methods.

Technology

The EGL Oil Shale Process (patent pending) is a closed system relying on passive heating of the oil shale. The energy system involves multiple, deviated wells drilled from the surface to the oil shale zone, deviated to horizontal, and then returning to the surface. The wells will be cased, and will form part of a closed system through which a heat transfer medium will be circulated. Heat will be supplied by combusting natural gas or propane for the testing phase, and retort gas when it becomes available. Commercially, retort gas will be the primary source of heat, but boilers will be capable of combusting liquid or gaseous fuels.

The EGL Oil Shale Process provides unique methods of energy management, conservation, and efficiency. During the early stages of retorting of a vertical column of oil shale, the energy input will be completely utilized in heating the deposit. However, as the project proceeds, the exit heating fluid can be directed to an adjacent commercial drill pattern in which operations are just beginning, so that heat is efficiently used for initial reservoir heating, while the heat transfer medium is cooled to easily manageable temperatures. Equally importantly, as oil recovery from a pattern nears completion, it

will be possible to recover the energy in the hot formation, including that energy to preheat the heat transfer medium or generate steam for process use.

Geology and Hydrology

The geology of the region is well know because of the extensive drilling and mapping of the Piceance Basin that has be conducted over the last half century. The Tract was chosen because of its topographic and geology high. The oil shale to be tested is about 300-feet thick at a depth of approximately 1,000-feet and averaging about 25-gallons per ton of shale oil.

There is also a wealth of information from the USGS on the regional hydrologic systems. Also recent hydrology well drilled by private parties on Federal land could provide more detailed information if provided to EGL. Drilling and testing on the Tract will be required to fully define the oil shale resource and hydrologic conditions, before oil shale extraction testing begins. The Plan calls for initial de-watering of a small portion of the Tract to limit the amount of water to be processed. Water pumped from the aquifer will be returned to the natural system. During operations options of limiting water influx will be tested. After retorting operations are completed, the rock will be allowed to cool, and when water re-enters the oil shale strata it will be tested, treated if necessary and disposed of either back to the local watershed/aquifer or injected into a saline strata beneath the oil shale zones depending on the chemical makeup of the water being produced.

Pipeline and Well Interferences

After receiving the January 14, 2006 letter awarding EGL a R,D/D oil shale lease, EGL learned about a pipeline right-of-way application through the middle of its nominated 160-acre tract. EGL had been aware of small gas gathering pipelines on the Tract and had made plans to accommodate them. But, EGL understands that this new pipeline will be a 12-inch volatile liquids line operating at above 2,000-psi. The nature of the liquids being transported in this line poses a severe safety hazard if the line is accidentally breached. EGL has located the bulk of its proposed facilities north and west of the pipeline ROW but must be able to cross the line with a water injection line(s) and road access. Also, the access for power and road access may have to be altered at a cost to EGL to accommodate the buffer area adjacent to the liquids pipeline. EGL was unaware of this proposed ROW when it nominated the 160-acre tract, and on August 16, 2005 when a site investigation was made and pictures taken, there was no evidence of surveying or site investigations by the pipeline firm. It would be desirable to relocate the referenced pipeline off of EGL nominated tract or at least as far southeast as possible.

Also EGL has learned that a hydrologic monitoring well has been drilled and completed on the nominated Tract. The implications of this event will be evaluated, and may be a positive outcome if BLM makes the data from this test available to EGL.

Drilling Plans

EGL has developed an innovative technology for insitu processing oil shale deposits to produce hydrocarbons. The EGL Oil Shale Process (patent pending) involves a systems approach to application of modern oil and gas methodology to insitu oil shale processing. This unique technology, is based partially on the extraordinary progress made over the last twenty-five years in exploiting petroleum reserves, including advances in geology and geophysics, drilling and measurement while drilling (MWD), hydraulic fracturing and other means of stimulation of very low permeability and low porosity reservoirs, and new completion technology and production techniques. Advances in technology such as these have resulted in exploitation of entirely new types and classes of oil and gas reservoirs, and their application will enable efficient and economic development of oil shale deposits. Such oil and gas exploration and exploitation technology was not available during the late 1970's and early 1980's, the last period of intense interest in oil shale.

Environmental, Reclamation and Abandonment Aspects

EGL is committed to protection of the environment. Aside from the requisite need for it to obtain and comply with all necessary permits, it has the resources and experience in managing the environmental impacts from its operations. Also, one of the objectives of its R,D/D program is to assess environmental impacts and develop mitigation measures for a follow-on commercial project.

The EGL Oil Shale Process (patent pending) offers unique advantages for minimizing environmental disturbance. First, the process is a true insitu process, with oil and gas produced in place, and uses methods common to the oil and gas industry. Being insitu, the EGL Oil Shale Process requires no mining or spent shale disposal operations with their attendant site disturbance and water consumption. It also is designed to result in a small surface footprint through the use of centrally located drilling to provide for introduction of multiple deviated wells for energy delivery and for product collection. Unlike insitu processes tested in the 1970's and 1980's, the EGL Oil Shale Process does not entail the direct injection of fluids into the subsurface, so the EGL Oil Shale Process thus reduces the impact on subsurface water; also, there is little or no requirement for external sources of water since none is needed to moisten spent shale or mine waste.

The low temperature, long term heating of the carbonates in the oil shale results in low carbon dioxide emissions, compared to surface retorting processes that rapidly heat the oil shale to 900^{o} F. Carbon dioxide that is produced through combustion and retorting may be sequestered for re-injection and/or transported through a pipeline to nearby oil fields for use in secondary/tertiary recovery. This step is not anticipated for the field testing phase, but is an option for commercial operations if regulations at that time require reduction in the emission of green house gases.

(1) Names, addresses and telephone numbers of those responsible for operations to be conducted under the approved plan to whom notices and orders are to be delivered.

EGL Contact Information

The EGL individuals responsible for conducting operational activities:

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(2) Names and addresses of surface and mineral owners of record, if other than the United States

The entire 160-acre tract is owned by the United States and managed by the Bureau of Land Management (BLM). All existing Right-of-Ways (ROWs) on the tract are also administered by the BLM.

There is a federal oil and gas lease with oil shale stipulations that overlies the 160-acre R,D/D tract. Also gas pipeline ROW's C23293 and C24022 cross the tract. A proposed 12-inch petroleum liquids pipeline has been staked for crossing the tract. Lastly Shell Oil has drilled and completed a water monitoring well on the tract. None of the above are judged to provide any insurmountable obstacles to EGL's proposed testing program, but EGL urges BLM to curtail development of other surface facilities on the EGL 160-acre R,D/D lease so that it may carry out its proposed testing program.

(3) Detailed Tract and Project Description and Maps

(3)a. Geologic/Hydrologic conditions within the lease tract

Geology of the proposed test site

The nominated location for the test site is located near Black Sulphur Creek, about 6 miles to the west of Piceance Creek (see EGL Test Site & Tract Nomination map). The site is located near the crest of Black Sulphur Creek Anticline, as shown in Appendix A. In most of the central part of the Piceance Creek basin, the Uinta Formation is exposed, overlying the Green River Formation which outcrops in the deep incised valleys (e.g. Parachute Creek) and in the basin margins.

Unita Fm. – This formation is formed mainly from clastic fluvial-deltaic sediments prograding southward, intertoguing with the lacustrine Green River Formation. It includes mostly sandstones and siltstones but also conglomerates, marlstones, and oil shale. The thickness of this unit varies in localities and in the nominated area it is approximately 700 ft thick.

Green River Fm. (Parachute Creek Member) - This unit consists mostly of dolomitic marlstone and oil shale. It also contains some siltstones and sandstones and sparse algal limestone beds. The Parachute Creek Member is divided into several zones of rich oil shale separated by relatively leaner zones. The richest oil shale zone is the Mahogany zone with total thickness of up to 200 ft (~110 ft at proposed location) with an average content of 26 gal/ton. Below the Mahogany zone (separated by Groove B) lays the R-6 zone which also consists of highly rich oil shale. This zone is approximately 240 ft thick (140 ft at proposed location) with an average richness of 25 gal/ton (based on extrapolation from Sinclair Oil and Gas corehole 1, Center sec. 20 T1N., R99W). The overall thickness of the two zones is about 260 ft in the proposed location.

Structure - The proposed test site is located at the central part of the Piceance Creek basin on the southeastern part of Black Sulphur Creek Anticline near its crest. The structure axis trends to the NW-SE with beds dipping gently to the southeast (1°/110°). The nearest significant faults are located about 0.5 miles to the southwest. These faults are subparallel to the anticline crest with fault tips at Black Sulphur Creek showing vertical stratigraphic separation of several feet.

Hydrologic Overview

Surface Flow System - The hydrology of the proposed test area (see Figure 3-1) lies within the White River basin in Colorado Water Division 6. The proposed test site lies between the Ryan Gulch (intermittent flow) and perennial Black Sulphur Creek that both flow northeastward about 5 miles before joining with Piceance Creek, a principal tributary of the White River. From the junction with Ryan Gulch and Black Sulphur Creeks, the Piceance Creek flows northward about 10 miles and discharges into the

White River west of Rio Blanco Lake. The area is sparsely populated, mainly with isolated ranches.

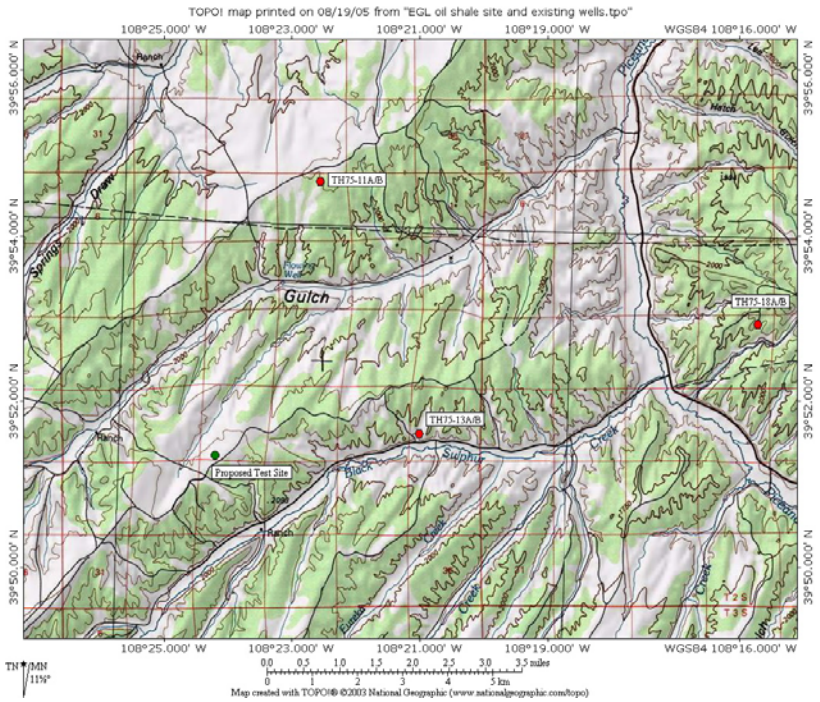

Figure 3-1 Location of proposed oil shale test site and the nearest geohydrologic test wells

Recharge is seasonal in nature, mostly from snow melt that accumulates during the winter months. The proposed test site is outside of substantial natural recharge. Surface recharge in the area either runs off into the surface drainage and/or infiltrates through a thick unsaturated zone downward to the upper aquifer, and given sufficient elevation and permeability in the Mahogany Zone (see below), through the lower aquifer to discharge into the surface drainages as springs or stream flow. Figure 3-2 is a diagram of the surface-ground water flow system in the area.

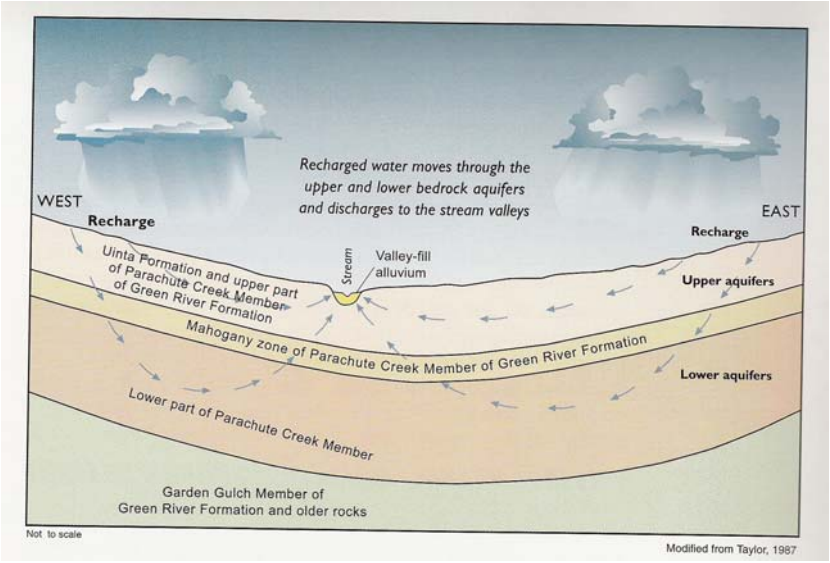

Figure 3-2 Schematic diagram of the flow system in the Piceance Creek area

The stream flow is a combination of the seasonal recharge and discharge from the groundwater system into the streams (baseflow). Figure 3-3 shows the measured discharge on Black Sulphur Creek over two years. Data was not available for Ryan Gulch. The data shows that flow rates and general salinity (Specific Conductivity) is fairly constant throughout the year reflecting the source of the stream from Figure Four Spring.

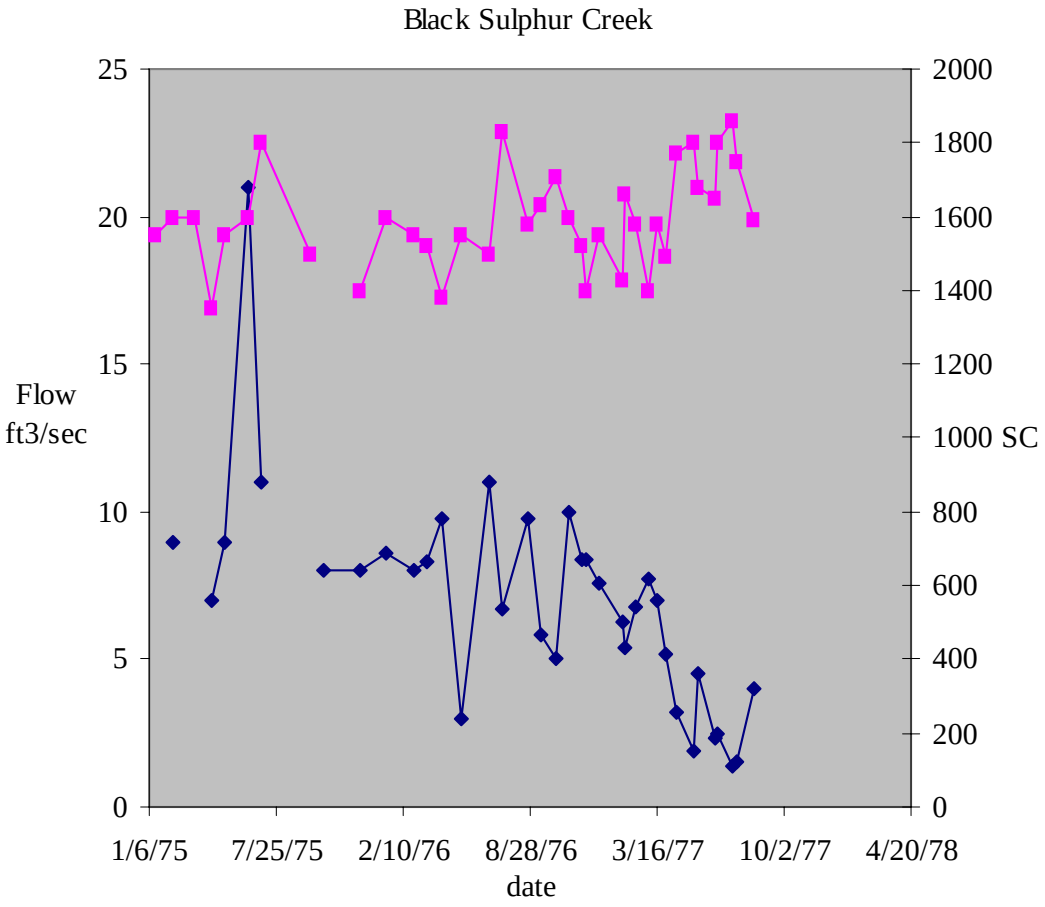

Figure 3-3 Plot of flow rate and Specific Conductance of Black Sulphur Creek.

EGL will conduct site specific investigations to better define the hydrogeology of the test site and establish pre-development baseline conditions. This will include drilling a series of multilevel monitoring wells around the edge of the site to characterize the geology, delineate the local aquifer structure and properties, and monitor seasonal changes in water levels. These wells can also be used to better define the local oil shale resource. Stream flow in the adjacent creek, flow at nearby springs and water quality will be monitored on a quarterly basis to supplement the existing information of surface flow.

(3)b. Estimate of quantity/quality of all mineral resources along with proposed cutoff grades

Estimates on oil shale resources in nominated area

The estimated depth for the Mahogany and R-6 zones is driven from well log correlation and extrapolation from near by wells to the nominated site. The correlation provide structural maps from which we extracted the depth of each target horizon. The projected depths in the proposed site are:

Top Mahogany zone – 1020 ft
Base Mahogany zone – 1130 ft
Top of R-6 zone – 1180 ft
Base of R-6 zone – 1320 ft

Appendix A presents a geological cross section and other data based at the proposed site.

Calculations for oil shale richness

The estimates on oil shale richness are based on well log correlation and extrapolation of Fischer Assay data from "Sinclair Oil and Gas Corehole 1" located 13 miles to the north of the proposed site. The two target intervals for this proposed location are the Mahogany zone and the R-6 zone. Extrapolating the data presented in Table 3-1 southwards to the proposed test site, points to the general thinning of the Mahogany and R-6 zones by approximately 30%. This is also reflected in the regional Isopach map for the Mahogany zone.

The amounts of potential oil in the Mahogany zone and the R-6 oil shale interval in the nominated site is estimated to be over 560 thousand barrels per acre (23,520,000 gal/acre), for an average richness of 26 gal/ton and thickness of 300 ft. Extending extraction to deeper zones with an average of 15 gal/ton (R5 through R-1) will yield an additional 1.2 million barrels reaching the total of over 1.5 million barrels per acre in place.

Zone	Thickness (ft)	Average Richness (gal/ton)	Thickness (ft) (exceeds 20 gal/ton)	Net / Gross
Mahogany	150	26	117	78%
R-6	240	25	170	68%

Table 3-1: Statistics for oil shale richness based on Sinclair Oil and Gas Corehole 1.

Calculations of Oil in place

Mahogany and R-6 zones
Oil shale richness = 26 gal/ton
Specific gravity = 2.2 gr/cm^3
1 ton of oil shale =>14.5 ft^3

1 ft^3 => 1.8 gal/ft^3
1 acre = 43,560 ft^2
Estimated Oil content for Mahogany + R-6
= 1 acre x 300 ft *1.8 = 23,522,400 gal (560,057 bbl).

R-5 to R-1 zones
Oil shale richness = 15 gal/ton
Specific gravity = 2.5 gr/cm^3
1 ton of oil shale =>12.8 ft^3
1 ft^3 => 1.17 gal/ft^3
Estimated Oil content for R-5 to R-1 zones
= 1 acre x 1000 ft *1.17 = 51,046,875 gal (1,215,400 bbl)

Total resources for each acre = 1,775,458 bbl

(3)c. Location and Design of the proposed roads, well pads, ponds, powerlines, pits, monitoring wells, storage tanks, surface structures/facilities, stack parameters and emission rates

See Appendix B for a layout and description of EGL Pilot Oil Shale Process Surface Equipment Layout

(3)d. Access Required for electrical power, natural gas, water and communications

See Appendix C for a map of the ROW's required for electric power line, natural gas pipeline. Communications with be via wireless hookups. Water will be trucked to the site.

(3)e. Equipment list, development sequence, estimated production rate, and estimated resource recovery factors

See Appendix B for a list of equipment.

The EGL plan for development of an insitu oil shale technology capable of producing shale oil in commercial quantities involves six primary phases. They are

1. Analysis
2. Research
3. Field Testing
4. Commercial Design
5. Commercial Demonstration
6. Commercial Production

The estimated duration of each of the phases follows (after issuance of R,D/D Lease) is shown on schedules in Appendix H.

The focus of this Plan of Operations is on the field testing activities that will occur on the 160-lease tract. EGL does not anticipate any site disturbing activities until six-months following the award of the R,D/D lease (approximately the fall of 2006 at the earliest).

The Field Testing Phase will focus on (1) resource characterization, (2) energy delivery systems, (3) product recovery systems, (4) reservoir hydraulic fracturing and/or other means of stimulation, (5) systems for optimization of energy recovery, and (6) operations, environmental protection, and reclamation.

The equipment required for the EGL process and the development sequence has been provided in Appendix B. In this section, we present estimated production rate and resource recovery factors. These can be best illustrated by a Block Flow Diagram (Figure 3.4). Four process areas are shown: boiler, downhole heat transfer system, downhole product collection and pumping system, and product recovery and processing system. The downhole systems are described in sections on well drilling and completion. The boiler and product recovery and process systems are briefly described below.

Boiler System

A 25 MMBtu/hr trailer or skid-mounted, direct-fired, forced-circulation steam generation boiler will be used for the demonstration phase of the project. The boiler will be initially be fired by natural gas, and will be capable of generating superheated steam at approximately 2,000 psig and temperatures up to 750^{o}F. During early stages of the heat transfer, it may be more efficient to operate the boiler at temperatures below 750^{o}F, and then subsequently increase temperature as needed during final retorting phase. Initial hookup of the package boiler unit will be straightforward, and will consist of connecting the unit's discharge pipe to the injection manifold, connecting the boiler feedwater supply system to the steam condensate return manifold, and connecting boiler feedwater makeup, electrical power, and fuel supply. After retorting of the oil shale has begun, the boiler may be fired by gas and oil produced by the retorting process. Approximate flow rates for the process streams, based on natural gas firing, are given in Table 3-2.

Table 3-2 EGL Oil Shale Process – Block Flow Diagram: Process Flows

Process Area	Stream	Flow Rate
Boiler (25 MM Btu/hr)		
	Fuel (natural gas)	28.4 MSCF/hr of natural gas
	Air	273 MSCF/hr
	Flue Gas	302 MSCF/hr
	Boiler Water Makeup	240 lbs/hr (0.7 bbl/hr cold water equivalent)
	Boiler Water Blowdown	240 lbs/hr (0.7 bbl/hr cold water equivalent)
	Superheated Steam	24,000 lbs/hr (68.5 bbl/hr cold water equivalent)
	Steam Condensate Return	24,000 lbs/hr (68.5 bbl/hr cold water equivalent)
Product Recovery and Processing System		
	Gas	See table 3-4
	Oil	See table 3-4

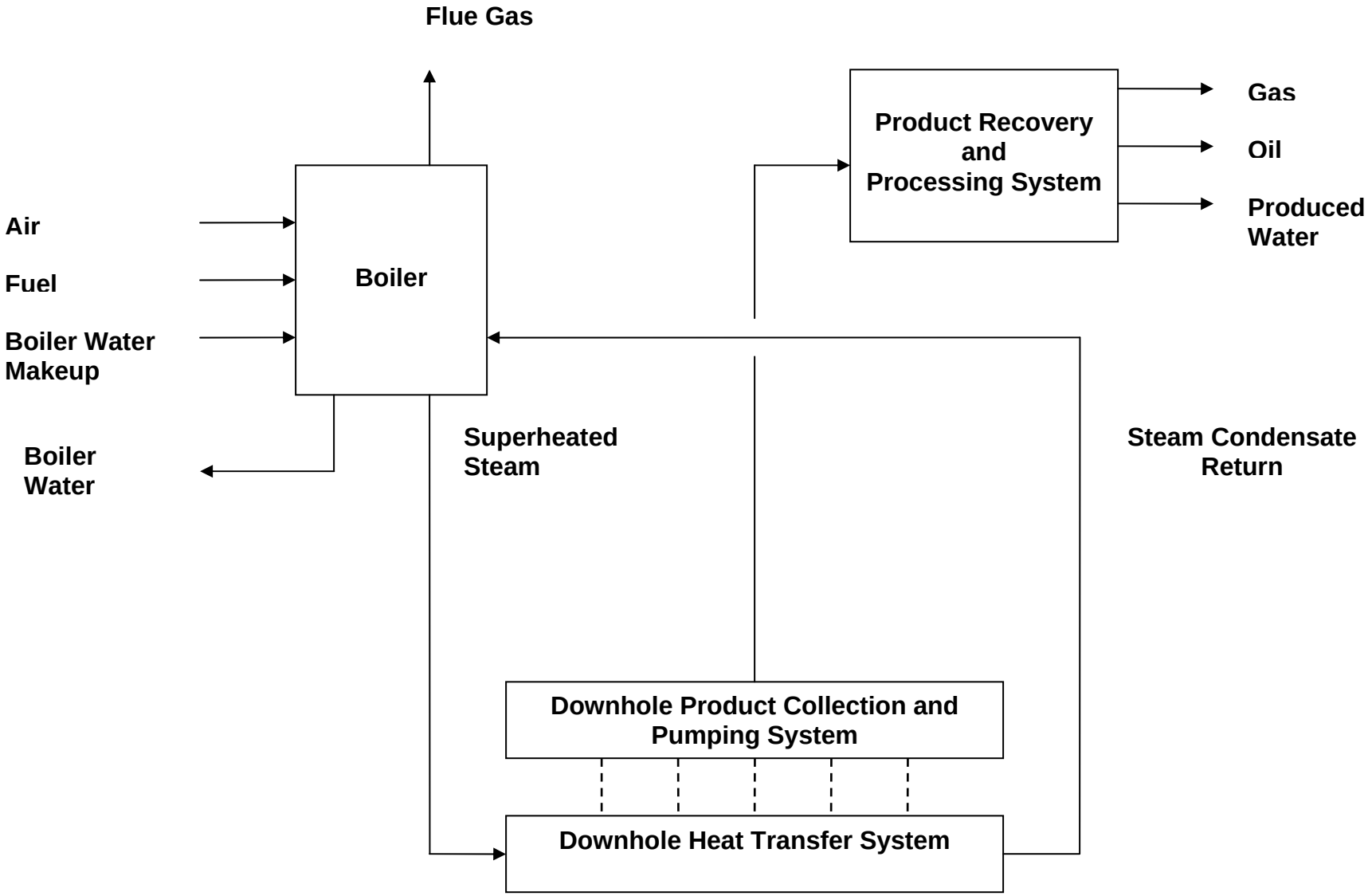

Figure 3-4 EGL Oil Shale Process – Block Flow Diagram

The package boiler unit consists of the following basic components: (1) feedwater system, (2) feedwater preheater, (3) fuel system, (4) combustion air system, and (5) convection section. Instrumentation, controls and safety systems are integral parts of the steam boiler system and ensure safe and efficient operation. These include pressure relief and safety valves, alarms such as high and low steam discharge pressure alarms, flame failure alarm, low burner blower pressure alarm, low feedwater flow alarm, high tube wall temperature alarm, and the like. Approximately 100 KW will be needed for electrical requirements for the boiler system. The boiler will require about 700 MSCF/day of natural gas. This will be supplied by contract with natural gas producers in the area.

Because of minor steam losses, and to maintain dissolved solids in the boiler at an appropriate level, it will be necessary to provide for boiler water makeup and boiler water blowdown. Careful consideration must be given to the quality of the water used for generating steam. Feedwater purity is a matter both of quantity of impurities and nature of impurities: some impurities such as hardness, iron and silica are of more concern, for example, than sodium salts. EGL will work closely with the boiler manufacturer to establish appropriate feedwater treatment. Boiler blowdown is water that is released from a boiler to remove impurities and sediment. Blowdown water is an industrial wastewater and usually contains contaminants such as dissolved/suspended minerals, heavy metals (iron, copper), corrosion inhibitors, oil, and/or algaecides. EGL will dispose of blowdown water with appropriate regard for environmental regulations via truck transport to a licensed disposal facility.

Flue gas composition for major components when firing with natural gas is given in the following table. For natural gas firing, CO and NO_x concentrations will be less than 100 ppm. EGL will work with the boiler supplier to assure that emissions of CO and NO_x are in acceptable ranges for the application.

Component	Composition (vol %)
Nitrogen	72
Carbon Dioxide	9
Water	18
Oxygen	1

Table 3-3 Flue Gas Composition

If the boiler system is fired with product gas or oil, EGL will utilize appropriate treatment of these streams prior to usage to assure that emissions are below acceptable levels.

Product Recovery and Processing System

The EGL Plan of Operations calls heating a 2-acre column of 25 gallon/ton (GPT) oil shale, 300 feet thick, with five horizontal heating (injection) wells at 20-foot spacing. Oil and gas products will be produced by four producer wells. As noted above, heat will be

supplied by a 25 MMBtu/hr steam generator package unit, which is equivalent to approximately 2.1 x 10^{11} Btu/year.

Oil production will depend on a continual process of light ends evolving and distilling from the oil pool at the bottom of the reservoir. As heating continues over the life of the project increasingly heavier oil will be produced. Generation of oil shale will result directly from heat transfer taking place in the process. The mechanisms for heat transfer will consist of a "conduction phase", a "transition phase", and a "convection phase". During the latter "convection phase", sustained oil and gas production will occur. An estimate of oil production rate during the sustained production period is given by:

> Oil Production Rate = (Overall Thermal Efficiency of the Process)*(Capture Efficiency of Oil Formed by Retorting) * (Heat Transfer Rate) * (Oil Shale Grade)/(Heat of Retorting)

For sustained commercial operation, thermal efficiency is expected to be about 80%, and capture efficiency 80%. For the test phase, these values will be lower because of loss of heat and oil and gas products to the surrounding strata. Consequently, for the initial test phase we use a thermal efficiency of 70% and a capture efficiency of 70%. This is equivalent to an overall resource recovery factor of about 50%. Based on a 2-acre treatment area, 25 gallon per ton oil shale, a heat input of 2.1 x 10^{11} Btu/year, and a heat of retorting of 189 Btu/lb:

> Equivalent Oil Production Rate = (0.70)*(0.70)*(2.1 * 10^{11} Btu/year)*(25 gallon/ton)*(1 ton/2000 lbm)*(1 bbl/42 gallon)/(189 Btu/lbm)
>
> Equivalent Oil Production Rate = 160,000 bbl/year maximum
>
> Equivalent Oil Production Rate = 440 bbl/day maxiumu

This is the anticipated approximate equivalent oil production rate for the 2-acre test pattern to be developed under the EGL Plan of Operations. It should be noted that the "Equivalent Oil Production Rate" is a measure of overall production of the oil and gas fractions. As stated above, actual oil production will depend on a continual process of light ends evolving and distilling from the oil pool at the bottom of the reservoir, and as heating continues over the life of the project increasingly heavier oil will be produced. During sustained operations, it is expected that at surface conditions, production will be about 30% gas and 70% light oil, based on heating value. A moderate amount of retort water also will be produced during the retorting process, estimated at 50 Bbl/day maximum.

Taking into account the fact shale retorting will be limited during the "conduction phase" and "transition phase", and that both oil and gas fractions will be produced at surface conditions, annual production of oil and gas are expected to be approximately:

Year	Oil (bbl)	Gas (MMSCF)
1	5,000	8
2	40,000	67
3 Plus	107,000	180

Table 3-4 Oil and Gas Production Schedule

Very limited information is available on water evolved during in-situ production of shale oil by indirect heating, however, produced water is expected to be a small fraction of oil and gas production. Equipment will be provided for three-phase separation of oil, gas and water. Disposal of produced water will be carried out via appropriate environmental regulations via trucking to a licensed disposal facility..

Field testing will be managed by EGL, but in keeping with commercial practice in the oil and gas industry. Much of the work will be conducted under contract with petroleum service companies that specialize in various aspects of the overall process. See Appendix D for Baker Hughes diagrams for heating and production wells on the 160-acre tract. Appendix D contains a map showing well alignment and surface facilities plot plan as located on the tract.

EGL has extensive experience in oil and gas operations and management of drilling, stimulation, and completion projects. EGL has had extensive discussion with service companies related to the EGL Oil Shale Process, and during bench testing and computer modeling EGL will enter into contracts with appropriate service companies to provide for key aspects of the field demonstration test. The objectives of the filed demonstration test phase will include demonstration of:

- Directional drilling techniques to place two injection wells within a target zone beneath the base of the R-6 zone and return to the surface.

- Methods of placing heat injection pipe or casing in the injection wells, and securing the casing at the injection surface by high temperature cement.

- Methods of allowing for thermal expansion of the injection piping systems as it exit the surface. This will involve a high temperature, mechanical seal system to allow for expansion of piping, while containing produced gas and liquids.

- Directional drilling techniques to place a “spider” oil production well terminating near the injection wells.

- Methods of placing propant or other materials in the spider hole to maintain a zone in which reflux of hydrocarbons can occur.

- Demonstration of hydraulic fracturing and other stimulation techniques to

establish a fracture zone between the injection holes and the production zone, for flow and refluxing of hydrocarbons.

- Design of surface equipment, including condensers, tanks, separators, heater-treaters, and other systems to allow smooth, safe, and continuous operation during the test phase.

This phase will commence with the design of facilities for the test site and infrastructure facilities (e.g. electric power line, natural gas pipeline, road improvements, and water supply).

As the design is continuing the first exploratory drill hole will be drilled, logged and analyzed, and the geologic, geophysical and hydrologic data obtained will be used to optimize the testing plan.

Site facilities will be constructed and de-watering wells drilled and completed after all permits and authorizations are obtained. It is anticipated that the design, permitting, surface facility construction, drilling and well completion will take 2-years to complete after the Research Phase is completed.

At that point in time the actual heating and shale oil production from the test site will begin. Initial production of gas, water and shale oil is expected in a few months after down-hole heating begins.

The testing phase is expected to continue for at least 3 plus before oil shale retorting is completed and sufficient data is acquired to confirm the technical, environmental and economic viability of the EGL Oil Shale Process. The use of the heating wells for cooling the oil shale after retorting studies are completed will be evaluated during the research phase. This would likely be accomplished by circulating cool water through one or more of the five heating wells.

After heating is ended, the recovery of shale oil is completed and all other tests are completed the site will be reclaimed as described in Section (6) of this Plan of Operations. Monitoring will continue so long as needed to determine that the site is acceptable for abandonment.

The Commercial Design Phase will begin after EGL believes that there is a high probability that a commercial venture using the technology then available will result in a profitable commercial venture.

(3)f. Number of employees during construction/operations, times/dates of construction/operations, including the amount/type of traffic required for construction/operations

The oil shale region of Colorado borders on areas of significant population growth from people moving to the area to either retire, occupy second homes, work in the thriving oil

and gas business, or commute to work in tourism centers like Aspen and Vail. The principal character of that part of the region has shifted from its earlier agricultural, mining, and petroleum emphasis to tourism and recreation. EGL's oil shale lease tract is in the Piceance Basin of Colorado in an unincorporated area of Rio Blanco County. This area has been relatively unaffected by the above mentioned changes.

EGL's technology is most applicable to the center of the Piceance Basin about half way between Rio Blanco and White River City. The region is bounded by Rifle, Meeker and Rangely, Colorado. There are no towns within this area so workers and contractors will commute to the job site during the test phase of the program. A man camp is not contemplated for the test phase, but for those required to attend tests around the clock there are expected to be trailers where workers can be housed on a temporary non-routine basis. Planning for commercial development will include the pros and cons of a new community, temporary construction worker housing and bussing to and from local communities.

It is estimated that a total of 10 to 40 employees will be required during test operations. Three shifts will be worked when required, but most employees will work during daylight hours. During construction of the test facilities and drilling of the test wells more workers will be needed, and their numbers will vary depending on the phase of construction (from 10 to 100). Traffic will be on Piceance Creek Road to either Rifle or Meeker/Rangely via State Highways 13 and 64 respectively. All three of these communities have the infrastructure to handle the modest increase in population resulting from the testing phase of the EGL project.

EGL's insitu technology is not nearly as labor intensive as the mining and retorting technologies contemplated earlier. Thus the socioeconomic impacts will not be those anticipated in the last oil shale boom and bust. However, it and other projects like oil and gas development and saline mineral mining anticipated during the next decade will and are bringing impacts to the area, and include

- Increased traffic on Piceance Creek Road
- Potential direct and shorter access route to Meeker and/or Rangely
- Mass transit (e.g. busses) to reduce traffic, pollution and improve public safety
- Need for increased public services in remote parts of Rio Blanco County (e.g. sheriff and fire departments)
- Modest increased housing requirements for workers and their families
- Potential for man-camps during construction (on-site or in or near developed communities)
- Requirement for additional business services in developed communities (e.g. oil field services in Rangely and offices in Meeker and Rifle)
- Pressure on scarce water supplies and potential need for diversion facilities
- Potential for cumulative impacts resulting from multiple energy/mining projects in the region (e.g. oil shale, sodium, oil and gas, uranium, coal, power generation)

Estimation of the increase in traffic on Piceance Creek Road and other roads in the vicinity of the site is made difficult by several variables, including the varying number of

employees required during different phases of the project, the use of shifts that will avoid having the entire site staff arriving and leaving at the same time, and the different routes driven by employees traveling to and from different locations. Despite these uncertainties, it is likely that the increase in traffic on area roads will not be significantly greater than that associated with gas drilling operations that are common in northwest Colorado.

(3)g. Methods for containment/disposal of trash/waste material produced

Trash will be collected in animal proof containers and periodically hauled to a sanitary land fill in the county. Hauling may be by EGL company vehicles or contracted to a local trash hauling firm. All other wastes will be collected and disposed of in a manner consistent with existing laws and regulations.

The other wastes anticipated from the project include:

- **Drilling Phase:**
  Waste water and drilling fluids collected from drilling and production operations that will be trucked off the site by a contract water disposal firm for treatment and legal disposal.

- **Procedure Phase:**
  Waste water resulting from boiler blow-down and oil shale retorting will be likewise trucked offsite for legal disposal amounts of each are given in Section 3.e of this Plan of Operation.

(3)h. Locations of existing/abandoned mines and oil and gas wells

To EGL's knowledge there are no mines or oil and gas wells (either active or abandoned) on the 160-acre R,D/D tract. An Oil and Gas lease (COC 62055) with oil shale stipulations does exist, as well as pipeline and road ROWs.

After receiving the January 14, 2006 letter awarding EGL a R,D/D oil shale lease, EGL learned about a pipeline right-of-way application through middle of its nominated 160-acre tract. EGL had been aware of small gas gathering pipelines on the Tract and had made plans to accommodate them. But, EGL understands that this new pipeline will be a 12-inch volatile liquids line operating at above 2,000-psi. The nature of the liquids being transported in this line poses a severe safety hazard if the line is accidentally breached. EGL has located the bulk of its proposed facilities north and west of the pipeline ROW but must be able to cross the line with a water injection line(s) and road access. Also, the access for power and road access will have to be altered at a cost to EGL to accommodate the buffer area adjacent to the liquids pipeline. EGL was unaware of this proposed ROW when it nominated the 160-acre tract, and on August 16, 2005 when a site investigation was made and pictures taken, there was no evidence of surveying or site investigations by the pipeline firm. It would be desirable to relocate the referenced pipeline off of EGL nominated tract. An alternative is to allow EGL to move its nominated Tract a marginal distance to the north and east.

Also EGL has learned that a hydrologic monitoring well has been sited in the middle of the nominated Tract. The implications of this event will be evaluated, and may be a positive outcome if BLM makes the data from this test available to EGL.

(3)i. Typical oil shale structure and overburden cross section

Appendix A shows a diagram of the overburden, structure and thickness of oil shales on the tract. Also refer to Section (3) a. in this Plan of Operations. EGL anticipates testing its insitu process on the Mahogany and R-6 oil shale zones. They are estimated to be about 260-feet thick at about 1000-feet below the surface of the tract, and averaging about 25 gallons per ton of oil by Modified Fischer Assay. Initial drilling on the site will confirm the thickness, richness, depth, hydrologic properties, and presence of other minerals like nahcolite.

(3)j. Identification/Inventory of Cultural/Paleontology resources, and Threatened / Endangered (T/E) species along with proposed mitigation

Prior to initiating any land-disturbing activities, EGL will contract with an approved archaeologist to conduct a survey of cultural resources that might exist on the site. The initial phase of the cultural resource surveys will be a files search of the Colorado State Historic Preservation Office that will establish what previous investigations have been completed on or near the site, what cultural resources are known to exist on or near the site, and the general character and settings of known prehistoric and historic resources in the region. After completing the files search and after the snow melts in the spring and summer of 2006, a pedestrian survey will be conducted to locate, identify, and evaluate any undocumented cultural resources that might be affected by the project. Portions of the site that might have been adequately covered to current standards by previous cultural resource investigations will not be resurveyed. A survey report will be prepared and submitted to BLM for concurrence.

The EGL site is underlain by the Uinta formation, a middle and upper Eocene unit that has produced a variety of vertebrate and plant fossils and is considered a BLM Class I paleontologic formation. Class I formations are those known to contain vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils. Therefore, EGL will contract with an approved paleontologist to conduct a field survey of unsurveyed paleontologic resources that might exist on the site prior to any ground-disturbing activities. The results of the field survey will be documented in a report which will be provided to BLM.

The site is dominated by sagebrush with interspersed grasses. Pinyon pine and Utah juniper are scattered throughout the area. Threatened, endangered, and sensitive species that could potentially occur on or near the site include:

- bald eagle and other raptors;

- black-footed ferret (only if prairie dog towns of a minimum size exist within one-half mile of the site);
- sage grouse (only if suitable habitat exists);
- mountain plover (only if suitable habitat exists); and
- Dudley Bluffs twinpod and perhaps other plants.

In addition, the site is within crucial winter range for elk and mule deer.

Prior to undertaking any site development activities that have the potential to disturb sensitive biologic resources, EGL will conduct a habitat survey to identify any threatened, endangered, or sensitive species that might be adversely affected by site development activities. EGL will then conduct surveys for those species during appropriate survey periods.

Because no cultural, paleontologic, or sensitive biologic resources were identified in recent surveys conducted for Enterprise's Meeker Lateral, it is unlikely that EGL's activities would adversely affect such resources. However, if such resources are identified during the field surveys, EGL will mitigate any potential impacts with generally accepted methods and procedures.

(4) Drilling Plan Details

(4)a. Estimate Tops of Important Geologic Markers

Based upon correlation from drill holes some distance from the 160-acre tract, the following are estimated tops of important geologic markers (depth in feet below the average ground surface).

- Top of Mahogany 1,020
- Top R-6 1,180

(4)b. Estimated depths at which the top/bottom of anticipated water, oil shale, oil, gas, nahcolite, or other mineral-bearing formations are expected to be encountered

The geologic cross section shown in Appendix A is the general stratigraphy below the 160-acre tract. Oil Shale is expected to be encountered at the depths shown in Section (4) a. above, and extends below the top of the Mahogany for about 1,000-feet. Nahcolite is generally found as vugs and/or inter-bedded with the oil shales. Bedded nahcolite is also found below the oil shales especially toward the center of the Piceance Basin. Dawsonite is also found in the oil shales. Significant oil and gas is not generally found in the shallow strata associated with the oil shales, however small amounts of methane have been encountered in oil shale mines and drill holes, but not in commercial quantities. As to the location of water below the 160-acre tract refer to section (3) a. in this Plan of Operations and the following description of the ground water system and water quality.

Groundwater System

The groundwater system consists of the Quaternary alluvial deposits between 0-200 feet thick along the surface drainages that supply shallow wells and serve as recharge or discharge points for the underlying sedimentary rock aquifers, the upper and lower Piceance basin aquifers. The upper aquifer system consists of discontinuous silty sandstones with limited lateral extent, siltstones and marlstones of the Uinta Formation and Green River formation. The aquifer is characterized by semi-confined conditions due to the discontinuous nature of the sandstones. The Uinta formation is saturated below the stream levels. The underlying Parachute Creek Member, the topmost member of the Green River Formation, has the greatest effect on the local hydrology and water quality. Ranging in thickness from 500-1,800 feet, the Parachute Creek Member is primarily comprised of kerogenaceous dolomitic marlstone with thin pyroclastic beds. Hydraulic conductivity is highly variable due to the variation in lithology and local fracturing. Reported transmissivities in the upper aquifer range from 8-1000 ft^2/day, but generally are in the 610-770 ft^2/day range.

The Mahogany confining zone in the upper Parachute Creek Member forms a leaky aquitard that separates the upper aquifer from the lower aquifer that consists of the lower Parachute Creek Member of the Green River formation. The hydraulic conductivity of this zone is low and acts as an aquitard except where cut by fractures permitting vertical

flow between the two aquifers. The vertical conductivity has been estimated to be as large as 0.37 feet/day.

The lower aquifer consists of the lower Parachute Creek Member of the Green River Formation. In general, the hydraulic conductivity of this zone is low with the exception of portions of the upper third where saline minerals have dissolved. In several areas, the nahcolite and halite sequences have been dissolved leaving behind a brecciated "leached zone". The permeability in this leached zone is greater than in the surrounding unleached rocks. It has been reported that a loss of drilling mud often occurs in the leached zone. The enhanced permeability zones have higher flow volumes, but are thin (0.5-20 feet).

These two shallow aquifers are underlain by several thousand feet of a basal confining unit formed by the Douglas Creek, Garden Gulch and Anvil Point Members of the Green River Formation.

Groundwater Quality

Groundwater quality of surface water in the basin varies widely with TDS ranging between 390 to 45,000 mg/L. The salinity is relatively low (<1,500) in the southwestern portion of the Piceance Basin with the most saline water found along the northeastern portion of the basin where the groundwater discharges. The subsurface water quality is primarily controlled by the degree of contact with the saline minerals. Water salinity is significantly increased by dissolution of saline minerals. These minerals include nahcolite ($NaHCO_3$), which is primarily found in the northern part of the basin in three forms: crystal rosettes inches to feet in diameter, disseminated crystals in the oil shale tenths of an inch in diameter, and lenses/thin beds up to five feet thick. The dissolution of nahcolite forms the 'leached zone' directly below the Mahogany zone, which may have enhanced hydraulic conductivity (T = 8-1670 ft^2.day). Dawsonite ($NaAlOH_2CO_3$) is found in the northern portion of the basin as disseminated micron sized crystals. Due to the low solubility of dawsonite, the presence of this mineral does not affect the permeability or water quality in the Parachute Creek member. Bedded halite up to five feet thick is found in the central portion of the Piceance Basin. The halite (NaCl) can have a very strong influence on the water quality of the aquifer.

(4)c. Description of formations to be developed/heated along with associated temperatures of heating technology.

The formations to be heated are the Mahogany and R-6 oil shale zones of the Green River formation, described above. The oil shales will be heated to 650 to 750 degrees Fahrenheit to release the shale oil from the kerogen.

The EGL Oil Shale Process is a closed system relying on passive heating of the oil shale. Appendix D provides details on this innovative technical approach to shale oil recovery.

Bench tests and computer modeling are anticipated before field tests will be performed to confirm and refine EGL's innovative technology. It is designed to:

Work with natural physical properties

- Heat is introduced at the bottom allowing convection of vaporized petroleum products up the 6" production gathering "spider" holes to create heat plumes vertically throughout the shale body. This results in a gradual, reasonably uniform, gentle heating of the shale to (but not above) the temperature required to convert kerogen to bitumen to oil and gas with minimal amount of heating.

- Once sufficient oil has been released to surround the heating elements, it is anticipated there will exist a broad horizontal layer of boiling oil that will continuously convect hot hydrocarbon vapors upward through the 6" "spider" holes. Due to the natural effects of heat, gravity, condensation, and the different boiling temperatures of the various petroleum fractions, a natural *reflux* should occur within these "spider" holes as heat is continuously transferred to oil shale farther and farther above the heating elements.

- Having the heating elements immersed in shale oil will allow maximum heat input into the system (heat transfer from the heating element to oil is an order of magnitude greater than heat conduction to the oil shale) while limiting the actual temperature to about 650-750^{o} F , which is the boiling range [4] of the heavier constituents of the shale oil (C_{19}^{+}).

Maximize efficiency

- Minimum required heat will be achieved by gently heating the oil shale <u>to</u> the optimum temperature required for conversion, but not <u>above</u> it. Maximum amount of product, optimum product quality , and minimum coking should result from the same process. The continual refluxing of the various petroleum constituents will optimize fractionation and re-hydrogenation of the various hydrocarbon chains.
- For this test, the Mahogany and R-6 will be retorted to reduce costs and time, but the data acquired will be sufficient to extrapolate the results to the full oil shale zone for commercial operations. The oil shale below the R-6 can still be retorted at a later date on the 160-acre tract.

Minimize impact on environment

- Long, horizontal heating pipes and clustered heat transfer/production "spider" holes will help to minimize the environmental footprint. In situ heating will minimize the use of water. Limiting the maximum heating temperatures to the boiling point of C_{19}^{+} will minimize the production of CO_2, CO, coke and other undesirable byproducts of high temperatures, both in the produced gases and in the amount of hydro-carbon products and other leachable products left in the resultant shale residue.

Equipment and facilities

The surface facilities required to support the testing program are listed in Appendix B.

(4)d. Description of proposed circulating medium or mediums to be used in heating oil shale formations

A heating fluid will be pumped to sufficient pressure for circulation through the entire system, heated to the necessary final retorting temperature by surface heat transfer equipment, injected into the wells entering the conduit, and will flow through the multiple wells to provide heat to the oil shale deposit. The heating fluid will be returned at the surface to the heat transfer equipment for recycle. A number of heating fluids can be used, and the system is designed for sequential use of heating fluids during different phases of the project, if required. It is expected that steam will be used during the initial heating phase of the development. Steam has the advantages of high heat transfer coefficients in the interior of the pipe, excellent carrying capacity of energy due to its high latent heat of vaporization, and the ready availability and low cost of package steam boilers. This technology has been developed and applied in ongoing steam-flood oil recovery projects in California and around the world for the past 50 years. In addition to steam, during the later stages of processing it may be desirable to use a high temperature hot oil heat transfer medium, such as Dowtherm, Syltherm and/or Paratherm whose characteristics are listed in Appendix D. The system is designed to accommodate this and other fluid heat transfer media.

(4)e. Type/Characteristics of the proposed circulation medium to be employed in drilling, including types of mud and weighting material to be maintained

EGL anticipates using Lang Exploratory Drilling to drill and run casing on all monitoring, de-watering, coring, heating and production wells. The drilling method will be what is known as “flooded reverse circulation” which utilizes a combination of fresh water and air drilling to create a slightly underbalanced drilling environment. This minimizes lost circulation problems in the Uinta formation and avoids contaminating any aquifers encountered. Bentonite and polymer (Liquid Mud) will be used to control viscosity and maintain the mud weight around 9.1 – 9.3 lbs/gal. Drilling will require about 80 bbls per day of fresh water. The number of days required per hole will range from 3 to 12 depending on the amount of coring and testing done. We anticipate purchasing our water from local sources such as John Morgan in Black Sulphur, Dowd on the White River, the well at the Duckett Ranch, or possibly Natural Soda.

(4)f. Detailed description of fracturing methods, and types/amounts of propellants used

The only fracture stimulation required is to ensure that the parallel, heat transfer lateral holes along the bottom of the shale column to be heated are in communication with each other. These laterals are designed to be only 20 ft apart so the fracture stimulations will

be a series of very small (5000# or less) fracs propped with 20/40 Ottawa sand. EGL anticipates working with TerraTek out of Salt Lake City, Utah to make sure that the necessary whole cores, regional stresses, and stress orientations are identified so that TerraTek can design the proper fracture stimulation procedures to ensure that the placed fractures connect the laterals. EGL is investigating using tiltmeters and micro-seismic imaging to map the actual fracture growth and orientation.

(4)g. Expected bottom hole pressures and specifications for pressure control equipment

Regarding drilling operations, EGL anticipates to encounter normal (.433 psi/ft) bottom hole pressures. During retorting operations, EGL anticipates controlling back pressure on its production wells to keep the bottom hole pressure from a range of normal to substantially less than normal (but in no event significantly above normal). The bottom hole pressure will be continuously monitored and varied to maximize the efficiency of the retorting process and control of water influx into the produced zone.

(4)h. Identification of wells used in disposal, injection, and/or production along with proposed casing specifications along with proposed well life

See Appendix F for typical schematics for monitoring/de-watering heating and production wells. The monitoring/de-watering wells will use a high strength PVC or fiberglass casing to insure that produced waters will not be contaminated with oxidation by-products from steel casing. The wellbore for re-injecting the water produced from the de-watering wells will be similar, but will employ steel casing to facilitate higher injection pressures. Appendix F also shows a schematic for a heating well and a production well. The surface casing will be 165 ft of 13 3/8" 48#/ft H-40 casing. The long string will be 1,000 ft of 9 5/8" 40#/ft J-55 casing. The tubing will be custom designed 7" x 5 ½" Vacuum Insulated Tubing (VIT) down to just into the top of the Mahogany Zone. From there, along the base of the shale column to be heated it will consist of 1,000 ft of 5 ½" 14#/ft J-55 casing. From there back to the surface it will be the same as the 7" x 5 ½" VIT and accompanying casings described earlier. Appendix F shows a schematic for a production well. It will be identical to the thermal injection well with the exception that there will be no 5 ½" below the thermal packer.

(4)i. The amount/type of cement used in setting each casing string

For the monitoring/de-watering wells we will use Portland cement circulated to surface. For the thermal heating and production wells we anticipate using high temperature class G cement with 35% silica flour and Spherelite glass beads. Cement will be circulated to surface on all strings.

(5) Environmental Aspects

(5)a Water Rights, an estimate of the quantity of water to be used, types of products and by-products produced, storage/disposal of products produced from the process, and pollutants that may enter and receiving waters surface or ground

Strategies for Obtaining Water Supplies needed for Operations

EGL's Insitu Oil Shale Technology requires limited amounts of water. As an insitu process it does not produce mine and spent shale waste that requires moisturizing before disposal. The water balance is dependent upon the amount and quality of the water produced from insitu production and monitoring wells. After construction, drilling, start-up and shake down operations are completed the EGL process can operate without any significant outside surface sources of water.

Under normal operating conditions the test will produce up to 50 barrels per day of water that will be available for use in the processing facilities. When steam is used as a heating medium, water will be used as the source of steam, and water consumption for the system is equal to the blow-down from the boiler(s) and is estimated at 20 barrels per day. When other heat transfer media is used, such as heat transfer liquids or gases, water is not used to generate steam and water consumption is minimized to that required for cooling shale oil vapors and liquids, other utility type requirements, and nuisance dust control, estimated to be 5 barrels per day. In order to drill for, use, and store in an impoundment water produced during test and monitoring operations, EGL will obtain authorizations from the Colorado Division of Water Resources via Water Well Permit Applications, a Notice of Intent to Construct a Water Impoundment Structure and Statement of Beneficial Use, as each may be applicable. Permits for dewatering, injection, disposal and evaporation of excess produced water will be obtained from the appropriate agencies.

Water needed during the pre-operational activities like drilling, road construction, start-up, etc would come from local sources. EGL will seek permission from local land owners to use water subject to their water rights, or obtain permission directly from the State. See Appendix G for information on well permits.

Approximately a maximum 440-barrels per day of crude shale oil will be produced during sustained test operations. Gas produced during the field test, in amounts show in section (3)e will be flared or burned as fuel for heating the heat transfer medium.

Shale oil produced during test operations will be separated from the gas and water produced with it, and stored in tanks at the 160-acre tract. Based upon a test phase production rate of 440-barrels per day and the need for 4 days of storage, at least 2000 barrels of storage is required; therefore, four 500 barrel tanks are planned. They will be placed in berms and equipped with truck load-out equipment. Disposal of the 50 barrels per day of retort water will be stored in tanks and removed via trucks to a licensed

disposal firm. An evaporation pond is not anticipated to be needed for retort water evaporation.

Crude shale oil produced during test operations will be trucked from the site to markets in Colorado, Utah and Wyoming. Arrangements for the sale of the produced shale oil will be made during the research stage of the project.

(5)b. Spill Prevention Control and Countermeasures

Site facilities are currently undergoing preliminary design. As these facility plans advance, EGL will prepare a Spill Prevention, Control, and Countermeasure (SPCC) Plan in accordance with the applicable requirements contained in 40 CFR Part 112. The plan will consist of three sections with appropriate appendices identifying and addressing all spill-related issues anticipated at the EGL site.

The first section of the SPCC plan will provide general facility information, pertinent company contact information, a site description, map(s), facility layout diagram(s), information regarding site proximity to navigable waters, oil storage and handling details, and conformance with state and local requirements.

The second section of the SPCC plan will outline the procedures to be followed in case of a spill or discharge, including procedures for verbal and written notifications, spill mitigation, shutoff, and shutdown. In addition, an overview of the disposal plan and facility personnel training will be provided. This section will also describe the submittals that will be made in case of a discharge into a navigable water.

The third section of the SPCC plan will comprise the majority of the plan. This section will provide detailed information regarding potential release sites and scenarios. It will take into consideration the sizes of tanks, processing machinery, and pipeline infrastructure. The esign and practicality of any secondary containment structures will be discussed along with details on other spill prevention measures, inspection procedures, and training protocols.

The approved plan will be fully implemented and made available on-site as outlined in the regulations.

(5)c. Prevention/Remediation Plan for groundwater contamination

The proposed site was carefully chosen to minimize potential environmental impacts from both a surface and subsurface stand point. The test site is on an anticlinal high with thick, rich shales and a relatively thick unsaturated zone. Up-gradient and down-gradient monitoring wells will be drilled along the edges of the site to initially better define the local aquifer system and properties and guide the location of the dewatering wells. The monitoring wells will penetrate through the upper aquifers of the Uinta and Parachute Creek Members and into the upper portion of the lower Parachute Creek Member

aquifers. The wells will be sampled and tested at multiple levels to delineate the aquifer system in detail. Final completion and perforation will be guided by the results of initial testing. These wells will then serve to monitor groundwater quality and water levels throughout the operational and post-operational periods. In addition, the stream flow in Ryan Gulch and Black Sulphur Creek and the spring discharge at the nearest ranches (Reigle and Duckett - Equity Camp Site, respectively) will also be monitored, contingent on access.

An important component of the proposed field test is the establishment of a dewatered zone from which the oil will be extracted from the shale. This production zone will extend to slightly below the R6 zone of oil-rich shale, approximately 1,500 feet below land surface. The hydraulic conductivity of the aquifers is highly variable, depending on lithology, lateral extent of the sandstone portion of the aquifers and the degree of fracturing. Calculations of pumping required for dewatering are included in calculations are based on general hydraulic conductivity values.

The feasibility of dewatering at the proposed test site will be evaluated using data from the monitoring wells to quantify the hydraulic properties of the upper and lower Piceance Creek Basin aquifers including the leached zone below the Mahogany confining layer. Providing the test wells show the hydraulic conductivity is sufficiently low, 4-8 pumping wells surrounding the subsurface retort area will be used to dewater the production zone. Groundwater extracted from the various aquifers during dewatering will be re-injected down gradient into the equivalent aquifer intervals in order to maintain regional water tables and not disturb baseflow to the streams.

Production wells drilled into the oil shale will pass through approximately 1,000-feet of overlying aquifer-bearing strata. Producing wells will be cased and cemented to the top of the oil shale strata and completed below that level to collect the oil, gas and water produced. Casings will be cemented through this zone to protect the local aquifers and mitigate any contamination or inadvertent diversion of water from these zones. Tests will be conducted to assure the integrity of the cement jobs. Heating wells penetrating the oil shale will also be cased so that heating fluids do not come in contact with the water bearing zones. See section (4)h and (4)i of this Plan of Operations for additional details.

To insure that heat is conserved for heating oil shale and not lost to the overlying strata, the use of vacuum insulated double wall tubing (VIT) (described in Appendix F and section (4)h.) will be tested. This approach is only one of the options to be evaluated during the Research Phase to accomplish the objectives of conserving heat and protecting the ground water in the strata overlying the oil shales.

Following the completion of production activities, circulation of the heating fluid will continue to extract heat from the test area. After sufficient cooling, the water table will be allowed to recover. Some local increase in the solute concentrations of groundwater is anticipated during cooling/recovery phase. The groundwater will be allowed to react with the spent shale and then pumped to the surface using the dewatering wells, treated and re-injected using the existing well system. This process will be repeated until

groundwater remains unaffected. Laboratory (bench-scale) testing on pre- and post-heating shale will be used to determine the solutes of concern, optimum cooling and reaction times, and post-heating rock properties. A detailed plan will be submitted after the laboratory tests are completed before field activities commence.

(5)d. A design for the necessary impoundment, treatment or control of all runoff water and drainage from disturbed areas to reduce soil erosion and sedimentation and to prevent the pollution of receiving waters

Site facilities are currently undergoing preliminary design. As these facility plans advance, EGL will develop a Stormwater Management Plan (SWMP) that conforms to the requirements established by the Colorado Department of Public Health and Environment (CDPHE) for compliance with Colorado's General Permit for Stormwater Discharges Associated with Construction Activities.

The plan will include a site description and detailed site map. All erosion and sediment control Best Management Practices (BMPs) that will be employed at the site, including structural site management practices, interim and permanent stabilization practices and materials handling procedures, will be described. BMPs for controlling sediment sources will be given greater emphasis than those designed to handle sediments after release.

After developing the SWMP, EGL will submit the required Stormwater Construction Permit Application to CDPHE at least ten days prior to the anticipated start of construction.

Implementation of the SWMP will commence with initiation of construction. The construction process will be carefully monitored, and any needed changes to the SWMP will be identified, incorporated into a revised SWMP and fully implemented.

After construction has been completed and final stabilization of the site has been achieved, EGL will provide CDPHE with a stormwater permit inactivation notice.

(5)e. A detailed description of measures to be taken to prevent or control fire, and the best management practices (BMPs) utilized to prevent soil erosion, subsidence, pollution of surface and ground water, pollution of air, damage to fish or wildlife or other natural resources and hazards to public health and safety

Fire Control

Prior to commencement of construction on the site, EGL will prepare and implement a fire prevention and suppression plan that will identify measures to be taken by EGL and its contractors to ensure that fire prevention and suppression techniques are carried out in accordance with federal, state, and local regulations, as well as requirements contained in BLM Manual Handbook H-2901-1. This plan will address, among other items, responsibilities and coordination among EGL, its contractors and fire control authorities;

fire prevention measures (including training, restrictions on smoking, use of spark arresters, parking, vehicle operation, storage areas, fire control and suppression equipment, road closures, refueling, burning, fire guards, communications, welding, restricted operations, monitoring, facility operations, and facility maintenance); fire suppression; and notification procedures.

Soil Erosion

As noted in more detail in Section 5.d (above), site facilities are currently undergoing preliminary design. As these facility plans advance, EGL will develop a SWMP that conforms to the requirements established by CDPHE and that will describe the site-specific erosion and sediment control BMPs, including structural site management practices, interim and permanent stabilization practices and materials handling procedures. BMPs for controlling sediment sources will be given greater emphasis than those designed to handle sediments after release. Implementation of the SWMP will commence with initiation of construction. The construction process will be carefully monitored, and any needed changes to the SWMP will be identified, incorporated into a revised SWMP and fully implemented.

Subsidence

The production zone for this lies approximately 1,200 feet below land surface. While the process will increase the porosity of the formation at the bottom of the wells, there is not expected to be any surface subsidence due to the depth of the wells, the plasticity of the overlying shale, and the small size of any voids that might be created at depth.

Surface Water and Groundwater Pollution

As noted below in Section 5.f, EGL will conduct quarterly monitoring of surface water and groundwater quality. Groundwater samples collected from EGL's monitoring well network and surface water samples collected from Ryan Gulch and Black Sulphur Creek will be analyzed for major cations and anions as well as selected trace metals and a suite of organic solutes based on bench-scale testing of pre- and post-heating oil shale. Should the monitoring program identify any exceedances of Colorado water quality standards, EGL will thoroughly investigate the causes, identify needed corrective actions, and implement the required remedial program..

Air Pollution

Once the equipment that will be used on site has been identified, EGL will determine whether an Air Pollution Emission Notice (APEN) must be prepared and submitted to the CDPHE Air Pollution Control Division. This will involve evaluating the planned EGL operations, identifying relevant regulated air pollutants, determining whether the sources are subject to Maximum Achievable Control Technology Requirements, identifying exempt sources, calculating uncontrolled actual emissions, and making a determination as

to whether an APEN is required. If so, the APEN will be prepared and submitted to CDPHE.

If information gathered in preparation of the APEN indicates that an air pollution permit is needed, EGL will prepare and submit a construction permit application, a notice of start up, and a Final Approval Self-Certification Package.

Damage to Fish, Wildlife, or Other Natural Resources

Prior to initiating any ground-disturbing activities, EGL will survey the site and adjacent land to determine whether any threatened, endangered, or sensitive species or their habitat exist on the site or close enough to the site that they might be adversely affected by site activities. This information can be used by BLM's third-party environmental assessment contractor to prepare a biological assessment if required by BLM.

Construction of surface facilities will necessitate some loss of vegetative and wildlife resources. EGL will make every effort to minimize the extent of these disturbances. It is expected that less than 10 acres of land will be disturbed, and the environmental consequences of these ground disturbing activities, as well as all other environmental consequences, will be evaluated in the planned environmental assessment.

Hazards to Public Health and Safety

Given the nature and extent of industrial activities at the site, as well as the fact that the site is located in a relatively remote part of Rio Blanco County, it is not likely that this project will pose any significant threat to public health and safety. Furthermore, EGL will implement a comprehensive health and safety program that will not only protect workers at the site but any non-employees who may be nearby.

(5)f. A detailed description of monitoring the development process, surface water, groundwater, air emissions, air quality, and proposed noise abatement procedures / equipment.

Surface Water and Ground Water

Groundwater quality will be analyzed quarterly using the monitoring well network described in Section 5.c (above). In addition, quarterly monitoring of surface water quality in Ryan Gulch and Black Sulphur Creek will be conducted upstream and downstream of the site if permission to access those locations can be obtained. The solutes that will be tested will include major cations and anions as well as selected trace metals and a suite of organic solutes based on bench-scale testing of pre- and post-heating oil shale. A more detailed plan that includes the final list of parameters, sampling and analytical protocols, data analysis techniques, and suggested indicators of concern will be prepared after completion of the laboratory testing. The monitoring plan will be submitted to BLM for approval prior to commencement of field activities. The anticipated completion date for this plan is by the end of 2006.

Air Emissions and Air Quality

Because the facilities at the EGL site will be minor sources of air pollutants, monitoring of air emissions and air quality is not expected to be required. However, if regulation change EGL will conduct air monitoring tests.

Noise

Noise level measurements will be made at the site prior to and after commencement of operations involving equipment with the potential to produce significantly elevated noise levels. Measurements will be made using equipment and procedures consistent with Colorado Oil and Gas Conservation Commission (COGCC).

Noise level measurements will be obtained around the perimeter of the site and at any potential noise receptors and noise sensitive areas (such as homes, schools, pastures, hospitals, and churches) within one mile of the site if access to those locations can be obtained. Other sources of noise within one mile of the site, such as industrial sites, highways, busy roads and equipment, will be identified, documented and measured if possible.

Measured background and site noise levels will be evaluated with regard to EPA guidelines, COGCC permissible limits, and any applicable Rio Blanco County ordinances.

(6) Reclamation Plan and Schedule

(6)a. A reclamation schedule and the measures to be taken for surface reclamation of the R,D/D tract that will ensure compliance with the established requirements.

EGL understand that BLM plans to grant the EGL 160-acre R,D/d lease/ROW using its mine leasing procedures rather than its oil and gas operation leasing/ROW procedures. However, EGL is not entirely clear as to whether the permitting, operation, closure, and abandonment of the tract should be permitted through the COGCC as an oil and gas operation or through the Colorado Division of Minerals and Geology (DMG) as a mining operation (recognizing of course that other agencies including CDPHE and the State Engineer's Office retain jurisdiction over certain specific permitting requirements). EGL's initial review of the statutes, policies, and regulations of these two agencies suggests that it is likely that COGCC will have primary regulatory authority and that EGL should base its site reclamation program on COGCC's regulations (1000 Series Reclamation Regulations).

Site Preparation

EGL site preparation plans include the following elements in conformance with COGCC Rule 1002:

Fencing – While no grazing leases have been identified on the nominated site, the facility perimeter will be fenced, effectively excluding livestock from reserve pits, wellheads, pits, and production equipment.

Soil Removal and Segregation – When excavating, the A soil horizon or the top 6 inches, whichever is deeper, will be separated and stored, and the stockpile locations will be marked or documented. When the soil horizons are too rocky or too thin to practicably segregate, the topsoil will be segregated to the extent possible and stored. The stockpiled soils will be protected from degradation due to contamination, compaction, and from wind and water erosion. BMPs to minimize erosion and offsite sedimentation by controlling stormwater runoff will be implemented.

Drill Pad Locations - Drilling locations will be designed and constructed to provide a safe working area while reasonably minimizing the total disturbed surface area. Steep slopes will be avoided when reasonably possible. BMPs to minimize erosion and offsite sedimentation by controlling stormwater runoff will be implemented.

Surface Disturbance Minimization and Stormwater Management - Well sites, production facilities, gathering pipelines, and access roads will be located, constructed, and maintained so as to reasonably control dust and minimize erosion, alteration of natural features, and removal of surface materials. BMPs to minimize erosion and offsite sedimentation will be implemented.

Access Roads - Existing roads will be used to the greatest extent practicable to avoid erosion and minimize the land area devoted to oil and gas operations. Where necessary to assure all weather access, roads will be graveled or treated. BMPs to minimize erosion and offsite sedimentation by controlling stormwater runoff will be implemented.

Interim Reclamation

EGL interim reclamation plans include the following elements in conformance with COGCC Rule 1003:

General - Debris and waste materials will be removed. All exploration and production (E&P) waste will be handled according to the COGCC 900 Series rules. All pits, cellars, rat holes, and other bore holes unnecessary for further operations, other than the drilling pit, will be backfilled as soon as possible after the drilling rig is released to conform with surrounding terrain. Any guy line anchors left buried for future use will be identified by a marker of bright color. Material will not be burned or buried on the site without prior written consent of BLM and only if the burning is not prohibited by other applicable law.

Interim Reclamation of Areas No Longer in Use - All disturbed areas affected by drilling or subsequent operations, except areas reasonably needed for production operations, will be reclaimed as early as possible and as nearly as practicable to their original condition and will be maintained to control dust and minimize erosion. Interim reclamation will occur no later than 12 months after such operations unless the COGCC extends the time period because of conditions outside the control of EGL.

Compaction Alleviation - All areas compacted by drilling and subsequent oil and gas operations which are no longer needed will be cross-ripped to a depth of 18 inches unless and to the extent bed rock is encountered at a shallower depth.

Drilling Pit Closure - All drilling fluids will be disposed of in accordance with COGCC 900 Series rules. After the drilling pit is sufficiently dry, materials removed from the pit for drying will be returned to the pit, and the pit will be backfilled. If subsidence occurs over the closed drilling pit during the two year period following drilling pit closure, additional topsoil will be added to the depression and the land will be re-leveled to as close to its original contour as practicable.

Restoration and Revegetation - When a well is completed, all disturbed areas no longer needed will be restored and revegetated as soon as practicable. All segregated soil horizons will be replaced to their original relative positions and contour as near as practicable and will be tilled adequately in order to establish a proper seedbed. The disturbed area then will be reseeded in the first favorable season with a seed mix approved by BLM.

Weed Control - During drilling, production, and reclamation operations, all disturbed areas will be kept as free of noxious weeds and undesirable species as practicable.

Final Reclamation of Well Sites and Associated Production Facilities

EGL final reclamation plans include the following elements in conformance with COGCC Rule 1004:

Well Sites and Associated Production Facilities - Upon the plugging and abandonment of a well, all pits, mouse and rat holes and cellars will be backfilled. All debris, abandoned gathering line risers and flowline risers, and surface equipment will be removed within 3 months of plugging a well. All access roads to plugged and abandoned wells and associated production facilities will be closed, graded, and recontoured. Culverts and any other obstructions that were part of the access road(s) will be removed. Well locations, access roads and associated facilities will be reclaimed. As applicable, compaction alleviation, restoration, and revegetation of well sites, associated production facilities, and access roads will be performed to the same standards as established for interim reclamation. Material will be burned or buried on the premises only with the prior written consent of BLM and only if such burning or burial will is not prohibited by Colorado and local law. All reclamation work will be completed within 12 months after plugging a well or final closure of associated production facilities. Although the COGCC may grant an extension if unusual circumstances are encountered, every reasonable effort will be made to complete reclamation before the next growing season.

Production and Special Purpose Pit Closure - EGL will comply with the COGCC 900 Series rules for the removal or treatment of E&P waste remaining in production or special purpose pits before the pits may be closed for final reclamation. After any remaining E&P waste is removed or treated, all such pits will be backfilled to return the soils to their original relative positions. If subsidence occurs over closed pit locations, additional topsoil will be added to the depression, and the land will be re-leveled as close to its original contour as practicable.

Final Reclamation Threshold for Release of Financial Assurance - Successful reclamation of the well site and access road will be considered completed when: (1) reclamation has been performed according to COGCC Rules 1003 and 1004, and the total cover of live perennial vegetation, excluding noxious weeds, provides sufficient soils erosion control as determined by the COGCC through a visual appraisal; (2) disturbances resulting from flow line installations are reclaimed to the extent that they are reasonably capable of supporting the pre-disturbance land use; (3) a Sundry Notice has been submitted describing the final reclamation procedures and any mitigation measures associated with final reclamation; and (4) a final reclamation inspection has been completed by the COGCC and there are no outstanding COGCC compliance issues.

(7) Abandonment Procedures and Methods

(7)a. The method and timing of abandonment, including proposed well abandonment procedures, and removal of surface structures on R, D/D tract

Following the completion of production activities, circulation of the heating fluid will continue to extract heat from the test area. After sufficient cooling, the water table will be allowed to recover. Some local increase in the solute concentrations of groundwater is anticipated during cooling/recovery phase. The groundwater will be allowed to react with the spent shale and then pumped to the surface using the dewatering wells, treated and re-injected using the existing well system. This process will be repeated until groundwater remains unaffected. All EGL production wells at the site will then be plugged and abandoned in accordance with COGCC procedures. Monitor wells will be plugged and abandoned in accordance with CDPHE procedures.

All surface facilities will be removed from the site and either sold for other uses or as scrap. Unless directed otherwise by BLM, facility foundations and footers and electric power lines to the site will be left in place.

Once all surface facilities have been removed, the site will be returned to its original contours and reclaimed as described in Section 6, above.