ExxonMobil
Global Services Company
Colony Shale Oil Project
P.O. Box 2567
Houston, Texas 77252-2567

December 12, 2012

Colorado Division of Reclamation Mining & Safety
Grand Junction Office
101 South 3rd Street, Suite 301
Grand Junction, Colorado 81501

Attention: Travis Marshall

Re: Mined Land Reclamation Board Permit No. M-1980-047
Colony Shale Oil Project
Change-in-Plan

Mr. Marshall:

ExxonMobil desires to change the ground water monitoring program within the Colony Mine.

- At the Point-of-Compliance, quarterly testing of well MW-12 and water quality analysis described in Table 1 will continue.
- Well EF-V3A will be tested annually for the data in Table 1.
- To monitor the quality of the water that enters the research volume at Colony Mine, quarterly analysis for data shown in Table 2 will be done for well WW-11 and the mine drainage. The mine drainage will be collected outside of the mine.
- The ground water monitoring wells located inside the mine, CC-SD1, CC-ID1, EF-V9 and EF-V10, will have annual fluid level measurements performed.
- The remaining 4 groundwater monitoring wells in the vicinity of the bench, EF-V2, EF-V4, EF-01 and AW-1 will have fluid levels recorded quarterly.

Sampling and analysis procedures for groundwater sampling events will conform to the standards and guidelines outlined by the U.S. Environmental Protection Agency and the American Society of Testing and Materials. Test results will be reported to the DRMS.

We appreciate your assistance with this matter. Should you have any general questions regarding this application, please contact me at 281-654-6246. In addition, technical questions may be addressed to Roy Springfield at 713-431-7581. You may also email Roy at roy.l.springfield@exxonmobil.com.

Sincerely,

Tom L Adams

Tom L. Adams
Colony Supervisor
ExxonMobil Global Services Co.
Acting for and on behalf of
Exxon Mobil Corporation

Attachments:
Table 1
Table 2
Attachment A

TABLE 1

Point-of-Compliance-Analytical Parameters

Parameter	Method	Units
Benzene, Tolulene, Ethylbenzene & Xylenes	M8021B GC/FID	mg/L
Diesel Range Organics (C10 – C28)	M8015D GC/FID	mg/L
Aluminum, dissolved	M200.7 ICP	mg/L
Anitomony, dissolved	M200.8 ICP-MS	mg/L
Arsenic, dissolved	M200.7 ICP	mg/L
Barium, dissolved	M200.7 ICP	mg/L
Beryllium, dissolved	M200.7 ICP	mg/L
Boron, dissolved	M200.7 ICP	mg/L
Cadmium, dissolved	M200.8 ICP-MS	mg/L
Calcium, dissolved	M200.7 ICP	mg/L
Chromium, dissolved	M200.8 ICP-MS	mg/L
Cobalt, dissolved	M200.7 ICP	mg/L
Copper, dissolved	M200.8 ICP-MS	mg/L
Iron, dissolved	M200.7 ICP	mg/L
Lead, dissolved	M200.8 ICP-MS	mg/L
Lithium, dissolved	M200.7 ICP	mg/L
Magnesium, dissolved	M200.7 ICP	mg/L
Manganese, dissolved	M200.7 ICP	mg/L
Mercury, dissolved	M245.1 CVAA	mg/L
Molybdenum, dissolved	M200.7 ICP	mg/L
Nickel, dissolved	M200.7 ICP	mg/L
Potassium, dissolved	M200.7 ICP	mg/L
Selenium, dissolved	M200.8 ICP-MS	mg/L
Sodium, dissolved	M200.7 ICP	mg/L
Thallium, dissolved	M200.8 ICP-MS	mg/L
Uranium, dissolved	M200.8 ICP-MS	mg/L
Vanadium, dissolved	M200.8 ICP-MS	mg/L
Zinc, dissolved	M200.7 ICP	mg/L
Alkalinity as CaCO3	SM2320B – Titration	mg/L
Chloride	SM4500CL-E	mg/L
Conductivity @25C	SM2510B	umhos/cm
Fluoride	SM4500F-C	mg/L
Hardness as CaCO3	SM2340B – Calculation	
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	mg/L
Nitrite as N, dissolved	M353.2 – Automated Cadmium Reduction	mg/L
Nitrate/Nitrite as N, dissolved	M353.2 – Automated Cadmium Reduction	mg/L
Nitrogen, ammonia	M350.1 – Automated Phenate	mg/L
ph, (lab)	SM4500H+ B	mg/L
Phenol	420.4, Manual Distillation	mg/L
Residue, Filterable (TDS) @180C	SM2540C	mg/L
Sulfate	D516-02 - Tubidmetric	mg/L
TDS (calculated)	Calculation	
TDS (ratio – measured/calculated)	Calculation	

TABLE 2

Groundwater Samples-Analytical Properties

Parameter	Method	Units
Benzene, Tolulene, Ethylbenzene & Xylenes	M8021B GC/FID	mg/L
Diesel Range Organics (C10 – C28)	M8015D GC/FID	mg/L
Aluminum, dissolved	M200.7 ICP	mg/L
Arsenic, dissolved	M200.7 ICP	mg/L
Calcium, dissolved	M200.7 ICP	mg/L
Chromium, dissolved	M200.8 ICP-MS	mg/L
Iron, dissolved	M200.7 ICP	mg/L
Manganese, dissolved	M200.7 ICP	mg/L
Nickel, dissolved	M200.7 ICP	mg/L
Potassium, dissolved	M200.7 ICP	mg/L
Selenium, dissolved	M200.8 ICP-MS	mg/L
Sodium, dissolved	M200.7 ICP	mg/L
Vanadium, dissolved	M200.8 ICP-MS	mg/L
Alkalinity as CaCO3	SM2320B – Titration	mg/L
Chloride	SM4500CL-E	mg/L
Conductivity @25C	SM2510B	umhos/cm
Fluoride	SM4500F-C	mg/L
Hardness as CaCO3	SM2340B – Calculation	
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	mg/L
Nitrite as N, dissolved	M353.2 – Automated Cadmium Reduction	mg/L
Nitrate/Nitrite as N, dissolved	M353.2 – Automated Cadmium Reduction	mg/L
Nitrogen, ammonia	M350.1 – Automated Phenate	mg/L
ph, (lab)	SM4500H+ B	mg/L
Phenol	420.4, Manual Distillation	mg/L
Residue, Filterable (TDS) @180C	SM2540C	mg/L
Sulfate	D516-02 - Tubidmetric	mg/L
TDS (calculated)	Calculation	
TDS (ratio – measured/calculated)	Calculation	

Attachment A

ExxonMobil Colony Mine