

**ExxonMobil Global Services Company**

Colony Shale Oil Project  
Bldg. W3 Room 2B.481  
22777 Springwoods Village Parkway  
Spring, TX 77389

**ExxonMobil**

February 11, 2015

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

Attention: Travis Marshall

Re: Mined Land Reclamation Board Permit No. M-1980-047  
Colony Shale Oil Project  
Water Monitoring Program Change

**RECEIVED**

**FEB 12 2015**

**GRAND JUNCTION FIELD OFFICE  
DIVISION OF  
RECLAMATION MINING & SAFETY**

Mr. Marshall:

ExxonMobil desires to make several changes to the ground and surface water monitoring program currently in place at the Colony Mine.

- Four water monitoring wells inside the mine will be plugged and abandoned. These wells are WW-CC-SD1, WW-CC-ID1, EF-V9, and EF-V10. They were drilled under the auspices of Technical Revisions 14 and 17 to the Colony Mine Reclamation Permit, and were permitted by the Colorado Division of Water Resources (DWR). Both DRMS and DWR will be notified when the abandonments have been completed.
- Wells EF-2, EF-3A, EF-4, EF-WW-01, and EF-AW1, located outside the mine, will receive annual water level measurements. No samples will be taken from these wells for analysis.
- Quarterly samples will be taken from wells WW-11 and MW-12 (point of compliance), and the mine drainage. The samples will be analyzed for the data listed in the attached "Table of Analytes", dated February 11, 2015. This table differs from previous analyte tables used at Colony in that organic compounds are not included.
- Quarterly water level measurements at wells WW-11 and MW-12 will continue.
- Quarterly flow rate measurements of the mine drainage will continue.

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 832-625-3039. In addition, technical questions may be addressed to Bill Symington at 832-624-9367. You may also email Bill at [bill.symington@exxonmobil.com](mailto:bill.symington@exxonmobil.com).

Sincerely,



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

Attachments:  
Table of Analytes  
Attachment A

## Table of Analytes February 11, 2015

Parameter	Method	Units
Aluminum, dissolved	M200.7 ICP	mg/L
Anitimony, 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
Bicarbonate as CaCO <sub>3</sub>	SM2320B – Titration	mg/L
Carbonate as CaCO <sub>3</sub>	SM2320B – Titration	mg/L
Hydroxide as CaCO <sub>3</sub>	SM2320B – Titration	mg/L
Total Alkalinity	SM2320B – Titration	mg/L
Cation-Anion balance	Calculation	-
Chloride	SM4500CL-E	mg/L
Conductivity @25C	SM2510B	umhos/cm
Fluoride	SM4500F-C	mg/L
Hardness as CaCO <sub>3</sub>	SM2340B – Calculation	mg/L
Nitrate/Nitrite as N, dissolved	M353.2 – Automated Cadmium Reduction	mg/L
Nitrite as N, dissolved	M353.2 – Automated Cadmium Reduction	mg/L
Nitrate as N, dissolved	Calculation (requires NO <sub>3</sub> /NO <sub>2</sub> and NO <sub>2</sub> )	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 - Turbidmetric	mg/L
TDS (calculated)	Calculation	mg/L
TDS (ratio – measured/calculated)	Calculation	-

