

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



October 7, 2013

RECEIVED

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

OCT 21 2013
GRAND JUNCTION FIELD OFFICE
DIVISION OF
RECLAMATION MINING & SAFETY

Re: Mined Land Reclamation Board Permit No. M-1980-047
Colony Shale Oil Project
WATER MONITORING INFORMATION

Dear Mr. Marshall,

Please find enclosed two (2) copies of Exxon Mobil's HYDROLOGY MONITORING REPORT for the 3rd Quarter of 2013. Could you have questions, please contact me at 281-654-6246.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Tom L. Adams".

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

Enclosures

EXXON COLONY SITE
REPORT GROUNDWATER SAMPLES
MW12 WATER QUALITY - Metals

Date	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Hexavalent Cr(VI)	Co	Cu	Fe	Pb	Li	Mg	Mn	Hg	Mo	Ni	K	Se	Silica	Si	Ag	Na	Tl	U	V	Zn
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
9/10/2013	U	U	U	0.048	U	0.1	U	73.5	0.0015	U	U	0.0005	U	U	0.04	68.1	U	U	0.04	U	2.7	0.0085	N/A	N/A	N/A	86.7	U	0.0083	U	
Avg	U	U	U	0.05	U	0.10	U	73.50	0.00	N/A	U	0.00	U	U	0.04	68.10	U	U	0.04	U	2.70	0.01	N/A	N/A	N/A	86.70	U	0.01	N/A	U
Min	U	U	U	0.048	U	0.100	U	73.500	0.002	N/A	U	0.001	U	U	0.040	68.100	U	U	0.040	U	2.700	0.009	N/A	N/A	N/A	86.700	U	0.008	N/A	U
Max	U	U	U	0.048	U	0.100	U	73.500	0.002	N/A	U	0.001	U	U	0.040	68.100	U	U	0.040	U	2.700	0.009	N/A	N/A	N/A	86.700	U	0.008	N/A	U

EXXON COLONY SITE
REPORT GROUNDWATER SAMPLES
MW12 WATER QUALITY - Anions

Date	T. Alk.	BOD ₅	COD	Cl	Cond	CN _{total}	F	Hard	NO ₃ -N	NO ₃ -N+NO ₂ ⁻	NO ₂ -N	NH ₃ -N	TKN	o-P	P _{total}	TDS	SAR	SO ₄	S ²⁻	SCN	pH
9/10/2013	333	mg/L	mg/L	mg/L	µmhos/cm	(mg/L)	(mg/L)	mg/L	2.87	2.87	mg/L	U	mg/L	mg/L	mg/L	788	mg/L	283	mg/L	mg/L	s.u.
Avg	333.00	N/A	N/A	33.00	1200	N/A	1.00	464.00	2.87	2.87	U	U	N/A	N/A	N/A	788.00	N/A	283.00	N/A	N/A	8.30
Min	333.000	N/A	N/A	33.000	1200.000	N/A	1.000	464.000	2.870	2.870	U	U	N/A	N/A	N/A	788.000	N/A	283.000	N/A	N/A	8.300
Max	333.000	N/A	N/A	33.000	1200.000	N/A	1.000	464.000	2.870	2.870	U	U	N/A	N/A	N/A	788.000	N/A	283.000	N/A	N/A	8.300

EXXON COLONY SITE
REPORT GROUNDWATER SAMPLES
MW12 WATER QUALITY - Organics

Date	Benzene	Et-Benzene	m/p xylene	o xylene	Toluene	BTEX	TPH C10-C28	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	O&G	Phenol
9/10/2013	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	0.016
Avg	U	U	U	U	U	U	U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.02
Min	U	U	U	U	U	U	U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.016
Max	U	U	U	U	U	U	U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.016

EXXON COLONY SITE
REPORT GROUNDWATER SAMPLES
SW-MD-1 WATER QUALITY - Metals

Date	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Hexavalent Cr(VI)	Co	Cu	Fe	Pb	Li	Mg	Mn	Hg	Mo	Ni	K	Se	Silica	Si	Ag	Na	Tl	U	V	Zn
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
8/20/2013	U	U	U	U	U	U	U	61.5	U	U	U	U	U	U	U	53.1	U	U	U	U	U	0.0015	U	U	U	75.5	U	0.0027	U	U
Avg	U	N/A	U	N/A	N/A	N/A	N/A	61.50	U	N/A	N/A	N/A	U	N/A	N/A	53.10	U	N/A	N/A	U	U	0.00	N/A	N/A	N/A	75.50	N/A	0.00	N/A	N/A
Min	U	N/A	U	N/A	N/A	N/A	N/A	61.500	U	N/A	N/A	N/A	U	N/A	N/A	53.100	U	N/A	N/A	U	U	0.002	N/A	N/A	N/A	75.500	N/A	0.003	N/A	N/A
Max	U	N/A	U	N/A	N/A	N/A	N/A	61.500	U	N/A	N/A	N/A	U	N/A	N/A	53.100	U	N/A	N/A	U	U	0.002	N/A	N/A	N/A	75.500	N/A	0.003	N/A	N/A

EXXON COLONY SITE
REPORT GROUNDWATER SAMPLES
SW-MD-1 WATER QUALITY - Anions

Date	T. Alk.	BOD ₅	COD	Cl	Cond	CN _{total}	F	Hard	NO ₃ -N	NO ₃ -N+NO ₂ ⁻	NO ₂ -N	NH ₃ -N	TKN	o-P	P _{total}	TDS	SAR	SO ₄	S ²⁻	SCN	pH
8/20/2013	320	mg/L	mg/L	mg/L	µmhos/cm	(mg/L)	(mg/L)	mg/L	0.06	0.06	mg/L	U	mg/L	mg/L	mg/L	616	mg/L	186	mg/L	mg/L	s.u.
Avg	320.00	N/A	N/A	10.00	955.00	N/A	0.50	372.00	0.06	0.06	U	U	N/A	N/A	N/A	616.00	N/A	186.00	N/A	N/A	8.50
Min	320.000	N/A	N/A	10.000	955.000	N/A	0.500	372.000	0.060	0.060	U	U	N/A	N/A	N/A	616.000	N/A	186.000	N/A	N/A	8.500

Max	320,000	N/A	N/A	10,000	955,000	N/A	0,500	372,000	0,060	0,060	U	U	N/A	N/A	N/A	616,000	N/A	166,000	N/A	N/A	8,500
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**EXXON COLONY SITE
REPORT GROUNDWATER SAMPLES
SW-MD-1 WATER QUALITY - Organic**

[illegible]

**EXXON COLONY SITE
REPORT GROUNDWATER SAMPLES
WW11 WATER QUALITY - Metals**

Date	8/20/2013 U																														
	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Hexavalent Cr(VI) mg/L	Co mg/L	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg mg/L	Mo mg/L	Ni mg/L	K mg/L	Se mg/L	Silica mg/L	Si mg/L	Ag mg/L	Na mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	
Avg	U	N/A	U	N/A	N/A	N/A	N/A	16.20	U	N/A	N/A	N/A	U	N/A	N/A	21.70	0.02	N/A	N/A	U	0.50	0.01	N/A	N/A	N/A	297.00	N/A	U	N/A	N/A	N/A
Min	U	N/A	U	N/A	N/A	N/A	N/A	16.200	U	N/A	N/A	N/A	U	N/A	N/A	21.700	0.024	N/A	N/A	U	0.500	0.009	N/A	N/A	N/A	297.000	N/A	U	N/A	N/A	N/A
Max	U	N/A	U	N/A	N/A	N/A	N/A	16.200	U	N/A	N/A	N/A	U	N/A	N/A	21.700	0.024	N/A	N/A	U	0.500	0.009	N/A	N/A	N/A	297.000	N/A	U	N/A	N/A	N/A

**EXXON COLONY SITE
REPORT GROUNDWATER SAMPLES
WW11 WATER QUALITY - Anions**

Date	T. Alk mg/L	BOD ₅ mg/L	COD mg/L	Cl mg/L	Cond µmhos/cm	CN _{total} (mg/L)	F (mg/L)	Hard mg/L	NO ₃ ⁻ -N mg/L	NO ₃ ⁻ -N+NO ₂ ⁻ -N mg/L	NO ₂ ⁻ -N mg/L	NH ₃ ⁻ -N mg/L	TKN mg/L	o-P mg/L	P _{total} mg/L	TDS mg/L	SAR	SO ₄ mg/L	S ²⁻ mg/L	SCN mg/L	pH s.u.
8/20/2013	696			14	1400		6.3	130 U	U	U	U	0.79				872		71.5			8.5
Avg	696.00	N/A	N/A	14.00	1400.00	N/A	6.30	130.00	U	U	U	0.79	N/A	N/A	N/A	872.00	N/A	71.50	N/A	N/A	8.50
Min	696.000	N/A	N/A	14.000	1400.000	N/A	6.300	130.000	U	U	U	0.790	N/A	N/A	N/A	872.000	N/A	71.500	N/A	N/A	8.500
Max	696.000	N/A	N/A	14.000	1400.000	N/A	6.300	130.000	U	U	U	0.790	N/A	N/A	N/A	872.000	N/A	71.500	N/A	N/A	8.500

**EXXON COLONY SITE
REPORT GROUNDWATER SAMPLES
WW11 WATER QUALITY - Organics**

[illegible]

**EXXON COLONY SITE
REPORT GROUNDWATER SAMPLES
WW-EF-V3A WATER QUALITY - Metals**

Date	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Hexavalent Cr(VI) mg/L	Co mg/L	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg mg/L	Mo mg/L	Ni mg/L	K mg/L	Se mg/L	Silica mg/L	Si mg/L	Ag mg/L	Na mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L
8/20/2013	U	U	U	0.021	U	0.08	U	80.4	U	U	U	U	0.08	U	U	63.8	U	U	U	U	0.40	0.0001	N/A	N/A	N/A	94.3	U	0.0005	N/A	0.01
Avg	U	U	U	0.02	U	0.08	U	80.40	U	N/A	U	U	0.08	U	U	63.80	U	U	U	U	0.40	0.00	N/A	N/A	N/A	94.30	U	0.00	N/A	0.01
Min	U	U	U	0.021	U	0.080	U	80.400	U	N/A	U	U	0.080	U	U	63.800	U	U	U	U	0.400	0.000	N/A	N/A	N/A	94.300	U	0.001	N/A	0.010
Max	U	U	U	0.021	U	0.080	U	80.400	U	N/A	U	U	0.080	U	U	63.800	U	U	U	U	0.400	0.000	N/A	N/A	N/A	94.300	U	0.001	N/A	0.010

**EXXON COLONY SITE
REPORT GROUNDWATER SAMPLES
WW-EF-V3A WATER QUALITY - Antimony**

Date	T. Alk. mg/L	BOD ₅ mg/L	COD mg/L	Cl mg/L	Cond µmhos/cm	Ca ^{total} (mg/L)	F (mg/L)	Hard mg/L	NO ₃ -N mg/L	NO ₃ -N+NO ₂ -N ⁻ mg/L	NO ₂ -N mg/L	NH ₃ -N mg/L	TKN mg/L	α-P mg/L	P ^{total} mg/L	TDS mg/L	SAR	SO ₄ mg/L	S ²⁻ mg/L	SCN mg/L	pH s.u.
8/20/2013	376			11	1170		1.8	463	0.03	0.03 U		0.15				750		233			8.2
Avg	376.00	N/A	N/A	11.00	1170.00	N/A	1.80	463.00	0.03	0.03	U	0.15	N/A	N/A	N/A	750.00	N/A	233.00	N/A	N/A	8.20
Min	376.000	N/A	N/A	11.000	1170.000	N/A	1.800	463.000	0.030	0.030	U	0.150	N/A	N/A	N/A	750.000	N/A	233.000	N/A	N/A	8.200
Max	376.000	N/A	N/A	11.000	1170.000	N/A	1.800	463.000	0.030	0.030	U	0.150	N/A	N/A	N/A	750.000	N/A	233.000	N/A	N/A	8.200

**EXXON COLONY SITE
REPORT GROUNDWATER SAMPLES
WW-EF-V3A WATER QUALITY - Organics**

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