

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONVERSATION DIVISION

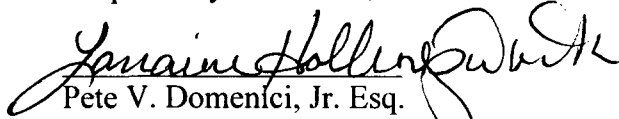
APPLICATION OF GANDY MARLEY, INC.  
TO MODIFY THEIR EXISTING NMOCD  
RULE 711 PERMIT NO. NM-01-019

CASE NO. 13480

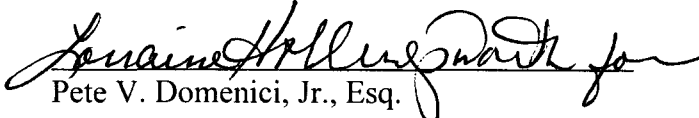
THIRD NOTICE OF FILING

COMES NOW the Applicant, Gandy Marley Inc. (GMI), by and through undersigned  
counsel of record, and respectfully provides Notice of Filing the attached documents as a  
comment to the record.

Respectfully Submitted,

  
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Attorney for Gandy Marley Inc.  
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(505) 883-6250

I hereby certify that a true and  
correct copy of the foregoing was  
served on all parties of record on the 24<sup>th</sup>  
day of June, 2005.

  
Pete V. Domenici, Jr., Esq.

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WCM

## NOTICE OF ERRORS IN CRI EXHIBIT 12

Prepared by Bill Marley of Gandy Marley, Inc.

After the hearing in Case No. 13480, I reviewed the information provided in CRI Exhibit 12, Table 1.2 (Attachment 1 hereto) and looked up the references identified by Controlled Recovery Inc. (CRI). I also requested CMB to conduct laboratory analysis on drilling mud samples taken from OCD Cell #21 at the Gandy Marley Landfarm. Based on my review of the relevant information, I have identified the following problems with the information submitted by CRI.

At the hearing held May 23 and 24, 2005, in Case No. 13480, CRI submitted testimony and exhibits which they allege demonstrate that, absent the RCRA Subtitle C exemption, oilfield waste would be considered hazardous. (Testimony of Keith Gordon, Hearing Transcript (TR), p.544/lns 18-21). Mr. Gordon testified that RCRA Subtitle C establishes threshold levels for determining if waste is hazardous. (TR at 546/lns3-6). Mr. Gordon relied on CRI Exhibit 12, Table 1.2, which he testified that he prepared, to conclude that oilfield waste is hazardous waste. (TR 534/lns8-25 to 535/lns6-14).

CRI's Table 1.2 is from "Treatment and Completion Fluids," as is evident by the total suspended solids, 520 parts per million. Treatment and completion fluids may be similar to drilling mud because they are used in drilling and completing of oil and gas wells. *However*, they will differ from drilling muds because treatment and completion fluids are small in volume compared to the soil cuttings removed from the well bore. Gandy Marley, Inc. is not requesting to dispose of fluids in the landfill, *only solids, semi-solids, and sludges* that pass a paint filter test.

CRI's Exhibit 12 Table 1.2 was taken from EPA / 310-R-99.006, SIC Codes 1311,1321, 1381, 1382, 1389, EPA – Profile of the Oil and Gas Extraction Industry. GMI must call attention to misrepresentations in this table. Misrepresentations of this magnitude, whether intentional or inadvertent, can be detrimental to the oil and gas industry. GMI's intent is to correct the erroneous information with the attached information, "Corrected Contaminant Levels for CRI's Table 1.2."

In CRI's Exhibit 12, Table 1.2, in the column "Pollutant Concentrations in Treatment & Completion Fluids," contamination levels were represented as *milligrams* per liter (mg/l), also known as parts per million, or "ppm." This differs from Table 11 from the EPA Profile of the Oil and Gas Extraction Industry (the source cited for Table 1.2), which shows the values numerically the same, but underneath the heading, "Pollutant Concentration (Micrograms/L)." EPA Table 11 is included as Attachment 2. In this document, the levels are reported in *micrograms per liter*, or parts per billion. A *microgram* per liter is 1/1000 of a milligram per liter, so the values in CRI's table were misrepresented by 1000 times. The values were then compared to New Mexico Water Quality Control Commission (WQCC) Human Health Standards (Drinking Water) instead of RCRA Guidelines. The RCRA guidelines are the basis for determining if a waste that is not exempt from RCRA is hazardous. Oilfield drilling muds are exempt from RCRA and are not hazardous waste. 40 CFR §261.4(b)(5). Table 11 of the EPA profile is based on studies conducted during the mid-1990s. Since that time, the oil and gas industry, like other industries, has taken great strides in waste minimization, including reductions in the amount of potentially hazardous constituents in the waste.

In the table titled "Corrected Contaminant Levels for CRI's Table 1.2," Attachment 3, GMI is submitting corrected levels of the specific contaminants for which values are listed and that are found in CRI's Table 1.2. The revised table accurately reflects milligrams per liter (mg/l). It also has values from 40 CFR §261.24, Table 1, Maximum Concentrations of Contaminants for the Toxicity Characteristic for those constituents that are included in §261.24.

Table 1.2

Contaminants	* WQCC Human Health Standards	** Pollutant Concentrations in Treatment & Completion Fluids
(1) Arsenic (As)	0.1 mg/l	166.0 mg/l
(2) Barium (Ba)	1.0 mg/l	498.1 mg/l
(3) Cadmium (Cd)	0.01 mg/l	26.1 mg/l
(4) Chromium (Cr)	0.05 mg/l	616.8 mg/l
(5) Cyanide (CN)	0.2 mg/l	52.0 mg/l
(6) Fluoride (F)	1.6 mg/l	62.0 mg/l
(7) Lead (Pb)	0.05 mg/l	1376.0 mg/l
(8) Total Mercury (Hg)	0.002 mg/l	
(9) Nitrate (NO <sub>3</sub> as N)	10.0 mg/l	
(10) Selenium (Se)	0.05 mg/l	42.9 mg/l
(11) Silver (Ag)	0.05 mg/l	1.6 mg/l
(12) Uranium (U)	0.03 mg/l	
(13) Radioactivity: Combined Radium-226 & Radium-228	30 pCi/l	
(14) Benzene	0.01 mg/l	1341.0 mg/l
(15) Polychlorinated biphenyls (PCB's)	0.001 mg/l	
(16) Toluene	0.75 mg/l	891.0 mg/l
(17) Carbon Tetrachloride	0.01 mg/l	
(18) 1,2-dichloroethane (EDC)	0.01 mg/l	
(19) 1,1-dichloroethylene (1,1-DCE)	0.005 mg/l	
(20) 1,1,2,2-tetrachloroethylene (PCE)	0.02 mg/l	
(21) 1,1,2-trichloroethylene (TCE)	0.10 mg/l	
(22) ethylbenzene	0.75 mg/l	1149.0 mg/l
(23) total xylenes	0.62 mg/l	2675.0 mg/l
(24) methylene chloride	0.1 mg/l	29.0 mg/l
(25) chloroform...	0.1 mg/l	
(26) 1,1-dichloroethane	0.025 mg/l	
(27) ethylene dibromide (EDB)	0.0001 mg/l	
(28) 1,1,1-trichloroethane	0.06 mg/l	
(29) 1,1,2-trichloroethane	0.01 mg/l	
(30) 1,1,2,2-tetrachloroethane	0.01 mg/l	
(31) vinyl chloride	0.001 mg/l	
(32) PAHs: total naphthalene plus monomethylnaphthalenes	0.03 mg/l	
(33) benzo-a-pyrene	0.0007 mg/l	
(1) Chloride (Cl)	250.0 mg/l	
(2) Copper (Cu)	1.0 mg/l	277.2 mg/l
(3) Iron (Fe)	1.0 mg/l	384,412.0 mg/l
(4) Manganese (Mn)	0.2 mg/l	5146.0 mg/l
(6) Phenols	0.005 mg/l	263.0 mg/l
(7) Sulfate (SO <sub>4</sub> )	600.0 mg/l	
(8) Total Dissolved Solids (TDS)	1000.0 mg/l	520,375.0 mg/l
(9) Zinc (Zn)	10.0 mg/l	362.9 mg/l

Sources:

\* NMAC 20.6.2.1 – Ground and Surface Water Protection

\*\* EPA – Profile of the Oil and Gas Extraction Industry

**IV.C. Available Data on Miscellaneous and Minor Wastes (Associated Wastes)**

Associated wastes are a relatively small but significant category of waste from the oil and gas extraction industry. The term "associated wastes" encompasses a wide range of small volume waste streams essential to oil and gas extraction. Because of their nature, these waste streams are the most likely to contain constituents of concern. Preliminary data from a 1995 survey estimate that 22 million barrels of associated wastes are generated annually (API, 1997). Four particular associated waste streams are discussed below.

**IV.C.1. Workover, Treatment, and Completion Fluids**

Well maintenance, including workover, treatment, and completion, requires the use of fluids similar to drilling fluid and is the largest miscellaneous source of waste. These fluids may contain a range of chemicals (depending on the maintenance activity undertaken) and naturally occurring materials (i.e., trace metals). Because of the presence of these constituents, the wastes require proper disposal. Onshore, most of these wastes are disposed of through Class II injection wells. Offshore, they may be discharged if they meet the standards in applicable NPDES permits. Otherwise, they are barged to shore and typically disposed of in an injection well. Table 10 presents the relative amounts of liquid and solid wastes from well maintenance operations. Table 11 contains the range and average pollutant concentrations from workover, treatment and completion fluid samples collected from wells in Texas, New Mexico, and Oklahoma.

<b>Table 10: Typical Volumes from Well Treatment, Workover, and Completion Operations</b>		
<b>Operation</b>	<b>Type of Material</b>	<b>Estimated Waste Volume (barrels)</b>
Completion and Workover	Completion/Workover Fluids	200 to 1000
	Formation Sand	1 to 50
	Filtration Solids	10 to 50
	Excess Cement	<10
	Casing Fragments	<1
Well Treatment	Neutralized Spent Acids	10 to 500
	Completion/Workover Fluids	10 to 200
Source: EPA Office of Water, 1996, Table IX-2.		

**Table 11: Pollutant Concentrations in Treatment, Workover, and Completion Fluids**

Pollutant Parameter	Pollutant Concentration (Micrograms/L)	
	Range	Average
<b>Conventionals</b>		
Oil and Grease	15,000 - 722,000	231,688
Total Suspended Solids	65,500 - 1,620,000	520,375
<b>Priority Pollutant Organics</b>		
Benzene	477 - 2,204	1,341
Ethylbenzene	154 - 2,144	1,149
Methyl Chloride (Chloromethane)	0 - 57	29
Toluene	298 - 1,484	891
Fluorene	0 - 123	62
Naphthalene	0 - 1,050	525
Phenanthrene	0 - 128	64
Phenol	255 - 271	263
<b>Priority Pollutant Metals</b>		
Antimony	0 - 148	29.60
Arsenic	0 - 693	166
Beryllium	0 - 25.1	8.64
Cadmium	7.6 - 82.3	26.08
Chromium	48 - 1,320	616.82
Copper	0 - 1,780	277.20
Lead	0 - 6,880	1,376
Nickel	0 - 467	115.52
Selenium	0 - 139	42.94
Silver	0 - 8	1.60
Thallium	0 - 67.3	13.46
Zinc	0 - 1330	362.94
<b>Other Non-Conventionals</b>		
Aluminum	0 - 13,100	6,468.40
Barium	66.5 - 3,360	498.10
Boron	4,840 - 45,200	15,042
Calcium	1,070,000 - 28,000,000	10,284,000
Cobalt	0 - 40.9	8.18
Cyanide	0 - 52	52
Iron	7,190 - 906,000	384,412
Manganese	187 - 18,800	5,146
Magnesium	10,400 - 13,500,000	5,052,280
Molybdenum	0 - 167	63
Sodium	7,170,000 - 45,200,000	18,886,000
Strontium	21,100 - 343,000	142,720
Sulfur	72,600 - 646,000	245,300
Tin	0 - 135	27
Titanium	0 - 283	74.58
Vanadium	0 - 4,850	1,156
Yttrium	0 - 131	41.92
Acetone	908 - 13,508	7,205
Methyl Ethyl Ketone (2-Butanone)	0 - 115	58
m-Xylene	335 - 3,235	1,785
o+p-Xylene	161 - 1,619	890
4-Methyl-2-Pentanone	198 - 5,862	3,028
Dibenzofuran	136 - 138	137
Dibenzothiophene	0 - 222	111
n-Decane	0 - 550	275
n-Docosane	237 - 1,304	771
n-Dodecane	0 - 1,152	576
n-Eicosane	0 - 451	226
n-Hexacosane	173 - 789	481
n-Hexadecane	0 - 808	404
n-Tetradecane	513 - 1,961	1,237
p-Cymene	0 - 144	72
Pentamethylbenzene	0 - 108	54
1-Methylfluorene	0 - 163	82
2-Methylnaphthalene	0 - 1,634	817

Source: EPA Office of Water, 1996, Table IX-7.

## Corrected Contaminant Levels for CRI's Table 1.2

Contaminants	Pollutant Concentrations in Treatment & Completion Fluids	Regulatory Level	RCRA Table
(1) Arsenic	.166 mg/l	5.0 mg/l	261.24
(2) Barium	.498 mg/l	100 mg/l	261.24
(3) Cadmium	.026 mg/l	1.0 mg/l	261.24
(4) Chromium	.616 mg/l	5.0 mg/l	261.24
(5) Cyanide	.052 mg/l		
(7) Lead	1.37 mg/l	5.0 mg/l	261.24
(10) Selenium	.0429 mg/l	1.0 mg/l	261.24
(11) Silver	.0016 mg/l	5.0 mg/l	261.24
(14) Benzene	1.341 mg/l	0.5 mg/l	261.24
(16) Toluene	.891 mg/l		
(22) Ethyl benzene	1.149 mg/l		
(23) Total xylenes	2.675 mg/l		
(24) Methylene chloride	.029 mg/l		
(2) Copper	.277 mg/l		
(3) Iron	384.4 mg/l		
(4) Manganese	5.146 mg/l		
(6) Phenols	.263 mg/l		
(8) Total <u>Suspended</u> Solids (not total dissolved solids)	520.3 mg/l		
(9) Zinc	.362 mg/l		

Sources:

EPA – Profile of the Oil and Gas Extraction Industry  
RCRA Regulations and Keyword Index, 1996 Edition

Attachment 3