

ORCC-01
Red File 12001

TO: Wayne Price, OCD
Denny Foust, OCD, Aztec, NM
Dave Cobrain, NMED, HMB

FROM: Dorinda Mancini, Environmental Manager
Ciniza Refinery, Giant Refining Co.

RE: Groundwater Sampling for GW 032 Permit Renewal

Listed below are the wells we intend to monitor in Spring 2001. In case we have equipment or weather problems, I am going to list them in the order of highest priority through lowest.

Very High – OW -1, OW - 2, OW - 3
OW - 29, OW - 30
OW - 12, OW -13, OW - 14 (for OCD permit)

High - OW - 5, OW -7, OW - 9, OW - 10
OW - 11, MW - 4

Lower - MW -1, MW - 2, MW - 5, SMW - 4

For all wells:

- Sample for the parameters listed in Tables E-1A through E-1D as given in the RCRA Post-Closure Permit, Volume 1, Section E. (Includes Modified Skinner and additional parameters using Methods 8260, 8270, and metals.) Copy attached. (See Note 1).
- Sample for the parameters needed to do a Cation/Anion Balance –
Anions: Alkalinity (including Bicarb, Carb and Hydroxide Alkalinity), Chloride, Fluoride, Nitrate as N, Sulfate, Phosphate as P, Bromide.
Cations: Aluminum, Calcium, Potassium, Magnesium, Sodium, Copper, Iron, Manganese, Zinc, Boron.
- On the Chain of Custody, request a calculated Ion Balance.
- Sample and analyze for pH and Conductivity (4 replicate analyses each).
- Sample and analyze for Total Dissolved Solids and Total Suspended Solids.
- Sample and analyze for Total Organic Carbon (TOC) and Total Halides (TOX) (4 replicate analyses each)

For Wells OW - 12, -13, -14, -29, -30

- Sample and analyze for MTBE

Note 1 – Copy to be faxed

GIANT

INDUSTRIES, INC.

Ciniza Refinery

Route 3, Box 7

Gallup, New Mexico 87301

Phone: 505/722-3833 Fax: 505/722-0210

DATE: 2/6/01 TIME: _____ AM / PM

TO: <u>Dave Cobrain</u>	FROM: <u>[Signature]</u>
FAX #: _____	DEPT: <u>Env.</u>
PHONE #: _____	EXTENSION: <u>direct 722-0227</u>

WE ARE TRANSMITTING 5 PAGE (S) FOLLOWING THIS COVERSHEET.

IF YOU DO NOT RECEIVE ALL THE PAGES, PLEASE INFORM US AS SOON AS POSSIBLE.

CONFIRMATION? YES NO CONFIRMED BY: _____

FILE REFERENCE: Spring GW Sampling
List follows memo sent 2/6/01 by email

COMMENTS:

Table E-1D. Mercury^a and Cyanide

Parameter	EPA Method SW-846	Description	Container	Preservative	Holding Time/Days	Aqueous Reporting Limit (µg/L) ^c	Soil Reporting Limit (mg/kg) ^c
Mercury ^a	7470/7471	CVAA	P or G	4°C ^b	28	2.0	23.
Cyanide	335.3/ 9010, 9014	Colorimetry	P or G	4°C ^d	14	200	1200

^aPrincipal hazardous constituent identified in Ciniza Hazardous Waste Facility Permit.

^bAqueous samples are field acidified to pH < 2 with HNO₃ and must not be refrigerated. Non-aqueous samples are cooled to 4°C.

^cBased on EPA Region 6, Human Health Medium-Specific Screening Levels and NM WQCC Regulations (1996). Analytical detection limits are required to be lower than reporting limits.

^dAqueous samples are field adjusted to pH > 12 with NaOH and refrigerated. Non-aqueous samples are cooled to 4°C.

- µg/l = microgram per liter
- mg/kg = milligram per kilogram
- CVAA = cold vapor atomic absorption
- G = glass
- P = linear polyethylene, polypropylene, or Teflon

Table E-1C. Modified Skinner List Metals and PHCs^a

Parameter	EPA Method SW-846	Description	Container	Preservative ^b	Holding Time/Days	Aqueous Reporting Limit (µg/L) ^c	Soil Reporting Limit (mg/kg) ^c
Antimony	7060(aq), 6010	GFAA/ICP	P or G	4°C	180	6.0	31
Arsenic	6010	ICP-AES	P or G	4°C	180	50	22
Barium	6010	ICP-AES	P or G	4°C	180	2000	5400
Beryllium	6010	ICP-AES	P or G	4°C	180	4.0	150
Cadmium	6010	ICP-AES	P or G	4°C	180	5.0	39
Chromium ^d	6010	ICP-AES	P or G	4°C	180	50	210
Cobalt	6010	ICP-AES	P or G	4°C	180	50	3400
Lead ^d	6010	ICP-AES	P or G	4°C	180	15	400
Nickel	6010	ICP-AES	P or G	4°C	180	100	1600
Selenium	6010	ICP-AES	P or G	4°C	180	50	390
Silver	6010	ICP-AES	P or G	4°C	180	50	390
Vanadium	6010	ICP-AES	P or G	4°C	180	260	550
Zinc	6010	ICP-AES	P or G	4°C	180	10000	23000

^aPrincipal hazardous constituent identified in Ciniza Hazardous Waste Facility Permit.

^bAqueous samples are field acidified to pH < 2 with HNO₃ and must not be refrigerated. Non-aqueous samples are cooled to 4°C.

^cBased on EPA Region 6, Human Health Medium-Specific Screening Levels (1999) and NM WQCC Regulations (1996). Analytical detection limits are required to be lower than reporting limits.

µg/l = microgram per liter

mg/kg = milligram per kilogram

ICP-AES = Inductively Coupled Plasma - Atomic Emission Spectroscopy

G = glass

P = linear polyethylene, polypropylene, or Teflon

Table E-1A. Modified Skinner List 8260 Volatile Organics and PHCs^a

Parameter	EPA Method SW-846	Description	Containers	Preservative	Holding Time/Days	Liquid Reporting ^c Limit (µg/L)	Soil Reporting ^c Limit (mg/kg)
Benzene	8260	GC/MS	G	4°C	14	5	0.67
2-Butanone (MEK)	8260	GC/MS	G	4°C	14	1900	7000
Carbon Disulfide	8260	GC/MS	G	4°C	14	1000	350
Chlorobenzene	8260	GC/MS	G	4°C	14	39	54
Chloroform	8260	GC/MS	G	4°C	14	0.16	0.24
Chloromethane	8260	GC/MS	G	4°C	14	1.5	1.2
1,1 Dichloroethane	8260	GC/MS	G	4°C	14	25	580
1,2 Dichloroethane	8260	GC/MS	G	4°C	14	5	0.34
1,1 Dichloroethene	8260	GC/MS	G	4°C	14	5.0	0.053
trans-1,2-Dichloroethene	8260	GC/MS	G	4°C	14	100	63
1,4-Dioxane	8260	GC/MS	G	4°C	14	6.1	44
Ethylbenzene ^b	8260	GC/MS	G	4°C	14	700	230
Methylene Chloride	8260	GC/MS	G	4°C	14	4.3	8.6
Styrene	8260	GC/MS	G	4°C	14	100	1700
1,1,2,2-Tetrachloroethane ^b	8260	GC/MS	G	4°C	14	0.055	0.37
Tetrachloroethene ^b	8260	GC/MS	G	4°C	14	5	4.9
Toluene	8260	GC/MS	G	4°C	14	750	1000
1,1,1-Trichloroethane	8260	GC/MS	G	4°C	14	60	200
Trichloroethene	8260	GC/MS	G	4°C	14	5	2.7
Total Xylene ^{a,d}	8260	GC/MS	G	4°C	14	620	860
Ethylene Dibromide ^b	8260	GC/MS	G	4°C	14	0.1	0.005
Acetone	8260	GC/MS	G	4°C	14	610	1500

^aPrincipal hazardous constituent identified in Cimiza Hazardous Waste Facility Permit.

^bAdditional constituents.

^cBased on EPA Region 6, Human Health Medium-Specific Screening Levels (1999) and NM WQCC Regulations (1996). Analytical detection limits are required to be lower than reporting limits.

^dRegulatory limits for individual isomers combined into a 'total' limit for these compounds.

mg/kg = milligrams per kilogram

µg/L = microgram per liter

G = glass with Teflon-lined lid

GC/MS = gas chromatography/mass spectrometry

Table E-1B. Modified Skinner List 8270 Semivolatile Organics Including TPH and PHCs*

Parameter	EPA	Description	Container	Preservative	Holding Time/Days	Liquid	Soil
	Method SW-846					Reporting Limit (µg/L) ^c	Reporting Limit (mg/kg) ^c
Anthracene	8270	GC/MS	G	4°C	14	1800	16000
Acenaphthene	8270	GC/MS	G	4°C	14	370	2800
Benzo(a)Anthracene	8270	GC/MS	G	4°C	14	0.09	0.62
Benzo(b)Fluoranthene	8270	GC/MS	G	4°C	14	0.09	0.62
Benzo(k)Fluoranthene	8270	GC/MS	G	4°C	14	0.9	6.2
Benzo(a)Pyrene ^a	8270	GC/MS	G	4°C	14	0.0007	0.062
Butyl Benzyl Phthalate	8270	GC/MS	G	4°C	14	7300	240
Chrysene ^a	8270	GC/MS	G	4°C	14	9.2	62
Diethyl Phthalate	8270	GC/MS	G	4°C	14	29000	49000
7,12-Dimethylbenz(a)-Anthracene	8270	GC/MS	G	4°C	14	"	"
Dimethyl Phthalate	8270	GC/MS	G	4°C	14	370000	100000
Di-n-Octyl Phthalate	8270	GC/MS	G	4°C	14	730	1200
Fluoranthene	8270	GC/MS	G	4°C	14	1500	2300
Fluorene	8270	GC/MS	G	4°C	14	240	2000
Indeno(1,2,3-cd)Pyrene	8270	GC/MS	G	4°C	14	0.09	0.62
2-Methylnaphthalene ^a	8270	GC/MS	G	4°C	14	30	660
2-Methylphenol (Cresol)	8270	GC/MS	G	4°C	14	1800	3000
3/4-Methylphenol (Cresol)	8270	GC/MS	G	4°C	14	1980	3300
Naphthalene ^b	8270	GC/MS	G	4°C	14	30	55
Nitrobenzene	8270	GC/MS	G	4°C	14	3.4	17
4-Nitrophenol	8270	GC/MS	G	4°C	14	2300	3800
Phenanthrene ^a	8270	GC/MS	G	4°C	14	"	"
Pyrene ^a	8270	GC/MS	G	4°C	14	180	1700
Pyridine	8270	GC/MS	G	4°C	14	37	61
Quinoline	8270	GC/MS	G	4°C	14	0.0056	0.04
Benzenethiolo	8270	GC/MS	G	4°C	14	"	"
Phenol	8270	GC/MS	G	4°C	14	5	36000
Bis(2-Ethylhexyl)phthalate ^b	8270	GC/MS	G	4°C	14	6.0	35
Dibenz(a,j)acridine ^b	8270	GC/MS	G	4°C	14	"	"
Dibenz(a,h)-anthracene	8270	GC/MS	G	4°C	14	0.0092	0.062
Dichlorobenzene ^{b,f}	8270	GC/MS	G	4°C	14	675	410
Methyl Naphthalene	8270	GC/MS	G	4°C	14	30	"
2,4-Dimethylphenol	8270	GC/MS	G	4°C	14	730	1200
2,4-Dinitrotoluene	8270	GC/MS	G	4°C	14	73	120

Table E-1B. Modified Skinner List 8270 Semivolatile Organics Including TPH and PHCs^a (Continued)

Parameter	EPA Method SW-846	Description	Container	Preservative	Holding Time/Days	Liquid Reporting Limit ($\mu\text{g/L}$) ^c	Soil Reporting Limit (mg/kg) ^c
2,4-Dinitrophenol ^b	8270	GC/MS	G	4°C	14	73	120
Benzo(j)Fluoranthene	8270	GC/MS	G	4°C	14	*	*
2-Chlorophenol	8270	GC/MS	G	4°C	14	30	61
2,4,6-Trichlorophenol	8270	GC/MS	G	4°C	14	6.1	44
Di-n-Butyl Phthalate	8270	GC/MS	G	4°C	14	3700	6100
Benzyl Alcohol ^b	8270	GC/MS	G	4°C	14	11000	18000
Methyl Chrysenes	8270	GC/MS	G	4°C	14	*	*
Total Cresol ^{a, f}	8270	GC/MS	G	4°C	14	3780	6300
TPH ^h	8015m	GS	G	4°C	7	—	1000

^aPrincipal hazardous constituent identified in Cirtiza Hazardous Waste Facility Permit.

^bAdditional constituents.

^cBased on EPA Region 6, Human Health Medium-Specific Screening Levels (1999) and NM WQCC Regulations (1996). Analytical detection limits are required to be lower than reporting limits.

^dNo regulatory limit provided. Laboratory detection limit will be used.

^eRegulatory limits for individual isomers combined into a "total" limit for these compounds.

^fTotal naphthalene plus monomethylnaphthalenes regulatory limit is < 30 $\mu\text{g/L}$ for aqueous samples.

^hTotal Petroleum Hydrocarbon as Gasoline Range Organics and Diesel Range Organics

$\mu\text{g/L}$ = microgram per liter

mg/kg = milligram per kilogram

G = glass with Teflon-lined lid

GC/MS = gas chromatography/mass spectrometry

GC = gas chromatography

Subject: Groundwater Sampling

Date: Wed, 7 Feb 2001 09:30:02 -0700

From: Dorinda Mancini <dmancini@giant.com>

To: "Wayne Price" <WPRICE@state.nm.us>,
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CC: Dave Pavlich <dpavlich@giant.com>, Dorinda Mancini <dmancini@giant.com>,
Steve Morris <smorris@giant.com>

After checking the WQCC list of standards, Giant will ensure that all required parameters are sampled and analyzed for with our Spring 2001 sampling. There are a few that we had not listed on the Tables E-1A through E-1D.

Wayne and Denny -

Are PCB's and Radioactivity required if there is no reason to believe them to be present in our groundwater?

If we need these parameters, would analyzing a few select (perimeter) wells suffice?

Thanks,
Dorinda