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(Lu Boren)
799-4893

API: 067-09409 312092
067-09426 312025
067-08069 312055

Fax

To: Lu Boren **From:** Karen Spray *Karen*
Fax: 375-6236 **Pages:** 14 *4 cover*
Phone: 799-4893 **Date:** 04/14/2008
Re: Closure of Drilling Pits **CC:**

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

Lu,

I have put together a very brief summary of the COGCC Rules that pertain to drilling pit closure on cropland based on our discussion earlier today. This should point you in the right direction, but please feel free to consult with the full set of Rules if you have additional questions. They are available online at www.cogcc.state.co.us – just click on Rules and you can pick by chapter. I tried to highlight areas of specific interest to you. Please call with questions.

I also cut-and-paste the COGCC Notification Rules that we discussed. Specific noticing requirements are called out under Rule 305.c., including the requirement to provide you with the COGCC informational brochure (also attached). There is a waiver to consult with a surface owner that is offered to operators, however you would have had to sign a document noting a waiver of Rule 306. You might want to check your documentation on this.

In reviewing the drilling mud and background soils chemistry data that you sent me I only identified one item that exceeded established COGCC standards (pH = 10.42 = too high). Although low levels of total petroleum hydrocarbons were identified (mostly diesel range), they were well below our sensitive area standard of 1,000 mg/L TPH and should not pose a problem. The Sodium Adsorption Ratio (SAR) was good at 3.3 – our standard allows up to 12 prior to being concerned about salt-loading in the soils.

Please let me know if there is anything else I can do to assist you.

Karen,

My name is Lu Boren. We got your name from John Mummery and Mark Wams. We are concerned about a pit on our property. Conoco Phillips is pushing to cut the liner, and we want to make sure it is safe for our farming operation and water quality.

Mark suggested fixing test results to you. We would appreciate any help you could give us. We feel we are being railroaded by Conoco.

I teach until 11:00. My phone # is (970) ⁷⁹⁹~~449~~-4893.

Thanks,
Lu

375-6236 (fax)

4/14/08 - 82 acres ^{irrigated} ~~at the~~ ^{ruined by}

- Cropland

- irrigated

First → cullers all in place

① pull liner

② ⁴ leave mat'l

COGCC RULE SUMMARY FOR DRILLING PIT CLOSURE
Rules as of April 14, 2008

. . .

905. CLOSURE OF PITS, AND BURIED OR PARTIALLY BURIED PRODUCED WATER VESSELS.

b. Lined pits and buried or partially buried produced water vessels:

1) Operators shall ensure that soils and ground water meet the allowable concentrations of **Table 910-1**.

(2) Pit evacuation. Prior to backfilling and site reclamation, E&P waste shall be treated or disposed in accordance with **Rule 907**. ★
= fluids

(3) Liners shall be disposed as follows:

A. Synthetic liner disposal. On irrigated crop land, liner material shall be removed and disposed in accordance with applicable solid waste rules. On non-irrigated crop land and on non-crop land, liner material may be left in place with surface owner approval. ★

. . .

907. MANAGEMENT OF E&P WASTE

d. Drilling fluids.

(1) Drilling pit fluid recycling. Drilling pit contents may be recycled to another drilling pit consistent with **Rule 903**.

(2) Drilling fluids treatment and disposal. Drilling fluids may be treated or disposed as follows:

A. Injection into a Class II well permitted in accordance with **Rule 325**;

B. Disposal at a commercial solid waste disposal facility; or

C. Land treatment or land application at a centralized E&P waste management facility permitted in accordance with **Rule 908**.

(3) Additional authorized disposal of water-based bentonitic drilling fluids. Water-based bentonitic drilling fluids may be disposed as follows:

A. Drying and burial in drilling pits on non-crop land; or

B Land application as follows:

i. Applicability. Acceptable methods of land application include, but are not limited to, production facility construction and maintenance, lease and farm road maintenance, or lining of stock ponds and irrigation ditches.

ii. Land application requirements. The average thickness of water-based bentonitic drilling fluid waste applied shall be no more than three (3) inches prior to incorporation. The waste shall be applied to prevent ponding or erosion and shall be incorporated as a beneficial amendment into the native soils as soon as practicable. The resulting concentrations shall not exceed those in **Table 910-1**.

iii. Surface owner approval. Operators shall obtain written authorization from the surface owner prior to land application of water-based bentonitic drilling fluids. *

iv. Operator obligations. Operators with control and authority over the wells from which the water-based bentonitic drilling fluid wastes are obtained retain responsibility for the land application operation, and shall diligently cooperate with the Director in responding to complaints regarding land application of water-based bentonitic drilling fluids.

v. Approval. Prior Director approval is not required for reuse of water-based bentonitic drilling fluids for land application as a soil amendment or lining material.

. . .

1003. INTERIM RECLAMATION

d. **Drilling pit closure.** As part of interim reclamation, drilling pits shall be closed in the following manner:

(1) **Drilling pit closure on crop land.** On crop land water-based bentonitic drilling fluids, except de minimis amounts, shall be removed from the drilling pit and disposed of in accordance with the **900 Series** rules. Drilling pit reclamation, including the disposal of drilling fluids and cuttings, shall be performed in a manner so as to not result in the formation of an impermeable barrier. Any cuttings removed from the pit for drying shall be returned to the pit prior to backfilling, and no more than de minimis amounts may be incorporated into the surface materials. After the drilling pit is sufficiently dry, the pit shall be backfilled. The backfilling of the drilling pit shall be done to return the soils to their original relative positions. *

(3) **Minimum cover.** On crop lands, a minimum of three (3) feet of backfill cover shall be applied over any remaining drilling pit contents. As to both crop lands and non-crop lands, during the two (2) year period following drilling pit closure, if subsidence occurs over the closed drilling pit location additional topsoil shall be added to the depression and the land shall be re-levelled as close to its original contour as practicable. *

COGCC NOTICING RULES
As of April 14, 2008

305. NOTICES OF OIL AND GAS OPERATIONS

a. The provisions of this Rule 305. shall not be applicable on federal or Indian owned surface lands.

b. Notices.

see 306.d. *30 days*
(1) **Notice of drilling.** Before an operator shall commence operations for the drilling of any well, such operator shall evidence its intention to conduct such operations by giving the surface owner and local governmental designee written notice thereof as provided in subparagraph c. below. Such notice of drilling shall be mailed or hand delivered to the surface owner not less than thirty (30) days prior to the date of estimated commencement of operations with heavy equipment as set forth in the notice and shall be mailed to the local governmental designee not less than thirty (30) days prior to the date of estimated commencement of operations with heavy equipment as set forth in the notice. Operators shall retain a record of such notice of drilling for a minimum of one (1) year. Such written notice also shall be posted on or near the proposed drillsite at least thirty (30) days prior to commencement of operations with heavy equipment. If notice for the commencement of operations is waived by the surface owner under this rule, the local governmental designee notice under this Rule 305.b. shall be received no later than the business day preceding commencement of operations with heavy equipment. The operator shall confirm that the surface owner notice requirements of this Rule 305.b. have been completed or waived before the Director approves an Application for Permit-to-Drill, Form 2.

(2) **Notice of subsequent well operations.** Before an operator shall commence subsequent well operations, such operator shall evidence its intention to conduct such operations by giving the surface owner written notice thereof in accordance with paragraph c. below. Subsequent well operations shall mean those operations that will materially impact surface areas beyond the existing access road or well site for any well, including operations such as fracturing or recompletion of the well but shall not include routine service and maintenance operations including but not limited to the changing of pumps. The notice of subsequent operations shall be mailed or hand delivered not less than seven (7) days prior to the date of estimated commencement of operations with heavy equipment as set forth in the notice.

*** (3) **Notice during irrigation season.** If a well is to be drilled on irrigated crop lands between March 1 and October 31, the operator, in addition to meeting the consultation requirements of Rule 306., shall contact the surface owner, or at the request of the surface owner, the tenant at least fourteen (14) days prior to the commencement of surface activities by the operator and arrange to coordinate drilling operations to avoid unreasonable interference with irrigation plans and activities.

(4) **Final reclamation notice.** The following notice requirements shall apply only to final reclamation operations commenced more than thirty (30) days after the completion of a well. A. Not less than thirty (30) days before any final reclamation operations are to take place pursuant to Rule 1004, the operator shall notify the surface owner in accordance with paragraph c. below. Final reclamation operations shall mean those reclamation operations to be undertaken when a well is to be plugged and abandoned or when production facilities are to be permanently removed.

c. **Notice requirements.** As to notices to be given pursuant to this Rule 305., included with each such notice shall be the following:

- (1) The estimated date that the operations for which notice is being given are to commence.
- (2) The name of the operator and the name, address and phone number of the individual representing the operator who can be contacted concerning the proposed operations.
- (3) The legal description (or plat) indicating the quarter quarter section upon which the operations will be conducted.
- (4) A statement that the surface owner has responsibility for notifying any affected tenant of the proposed operations.
- (5) With respect to the notices of drilling, the notice mailed or hand delivered to the surface owner shall also include a return addressed, postage prepaid postcard upon which surface owners may request their preference with respect to the consultation requirement under Rule 306., including the preference to appoint a tenant for consultation. If the surface owner appoints a tenant for consultation, that person's name, address, and telephone number must be provided to the operator by the surface owner on the postcard.
- (6) A copy of the Commission's informational brochure for surface owners, containing the rules pertaining to notice of oil and gas operations and opportunities for consultation thereon, as well as the rules of procedure for filing complaints and making applications for hearing. The brochure shall provide contact information for the Commission's main office, field offices and website, and shall describe the services and information available to the public, including access to a listing of local governmental designees. The brochure shall contain a prominent disclaimer advising surface owners to obtain legal advice as may be appropriate to their particular circumstances.

306. CONSULTATION.

In locating roads, production facilities and well sites, and in preparation for reclamation and final abandonment, the operator shall use its best efforts to consult in good faith with the affected surface owner, or the surface owner's appointed tenant as provided for in Rule 305.

Consultation with local governmental designees is addressed in Rule 306.a. (3) below. The following shall apply to each such consultation:

a. **Drilling consultation.** The good faith effort to consult shall occur at a time mutually agreed to by the parties prior to the commencement of operations with heavy equipment upon the lands of the surface owner. The operator shall confirm that the surface owner consultation requirements of this Rule 306. have been completed or waived before the Director approves an Application for Permit-to-Drill, Form 2.

- (1) **Information provided by operator.** When consulting with the surface owner or appointed tenant, the operator shall furnish a description or diagram of the proposed drilling location; dimensions of the well site; and, if known, the location of associated production or injection facilities, pipelines, roads and any other areas to be used for oil and gas operations (if not previously furnished to such surface owner or if different from what was previously furnished).

(2) **Good faith consultation.** Such good faith consultation shall allow the surface owner or appointed tenant the opportunity to provide comments to the operator regarding preferences for the timing of oil and gas operations and preferred locations for wells and associated facilities.

(3) **Local government consultation.** Local governments which have appointed a local governmental designee and have indicated to the Director a desire for onsite consultation shall be given an opportunity to engage in such consultation concerning the location of roads, production facilities and well sites prior to the commencing of operations with heavy equipment.

b. **Final reclamation consultation.** In preparing for final reclamation and plugging and abandonment, the operator shall use its best efforts to consult in good faith with the affected surface owner (or the tenant when the surface owner has requested that such consultation be made with the tenant). Such good faith consultation shall allow the surface owner (or appointed tenant) the opportunity to provide comments concerning preference for timing of such operations and all aspects of final reclamation.

c. **Tenants.** Operators shall have no obligation to consult with tenant farmers, lessees, or any other party ("tenant") that may own or have an interest in any crops or surface improvements that could be affected by the proposed operation unless the surface owner appoints such tenant for such purposes. Nothing shall prevent the surface owner from including the tenant during the consultation.

d. **Waiver.** The requirement to consult with the surface owner under this Rule 306. may be waived by the affected surface owner or the surface owner's appointed tenant at any time.

*most operators ask for this - do
you know if you signed one?*

↓ *La Plata County = Brett Sherman
382-6263*

Boren Pitz.

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

**EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons**

Client:	ConocoPhillips	Project #:	96052-0026
Sample ID:	Callison 34-9 29-2A	Date Reported:	05-20-08
Laboratory Number:	45488	Date Sampled:	05-09-08
Chain of Custody No:	3957	Date Received:	05-16-08
Sample Matrix:	Soil	Date Extracted:	05-16-08
Preservative:	Cool	Date Analyzed:	05-19-08
Condition:	Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.6
Diesel Range (C10 - C28)	4.6	0.3
Total Petroleum Hydrocarbons	4.6	0.6

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste,
SW-846, USEPA, December 1996.

Comments: Drilling Pit Sample.

Analyst

Review

ENVIROTECH LABS**PRACTICAL SOLUTIONS FOR A BETTER TOMORROW****EPA METHOD 8021
AROMATIC VOLATILE ORGANICS**

Client:	ConocoPhillips	Project #:	98052-0026
Sample ID:	Callison 34-9 29-2A	Date Reported:	05-20-08
Laboratory Number:	45488	Date Sampled:	05-09-08
Chain of Custody:	3957	Date Received:	05-16-08
Sample Matrix:	Soil	Date Analyzed:	05-19-08
Preservative:	Cool	Date Extracted:	05-16-08
Condition:	Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	0.9
Toluene	10.6	1.0
Ethylbenzene	1.5	1.0
p,m-Xylene	13.1	1.2
o-Xylene	8.2	0.9
Total BTEX	33.4	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	98.0 %
	1,4-difluorobenzene	98.0 %
	Bromochlorobenzene	98.0 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Drilling Pit Sample.

Analyst

Review

ENVIROTECH LABS**PRACTICAL SOLUTIONS FOR A BETTER TOMORROW****EPA METHOD 8021
AROMATIC VOLATILE ORGANICS**

Client:	N/A	Project #:	N/A
Sample ID:	05-19-BT QA/QC	Date Reported:	05-20-08
Laboratory Number:	45476	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	05-19-08
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	C-Cal RF	C-Cal RF	% Diff	Blank Conc	Detect Limit
		Accept Range	0 - 15%		
Benzene	3.3172E+007	3.3238E+007	0.2%	ND	0.1
Toluene	2.9814E+007	2.9874E+007	0.2%	ND	0.1
Ethylbenzene	2.2692E+007	2.2738E+007	0.2%	ND	0.1
p,m-Xylene	4.6611E+007	4.6704E+007	0.2%	ND	0.1
o-Xylene	2.1282E+007	2.1334E+007	0.2%	ND	0.1

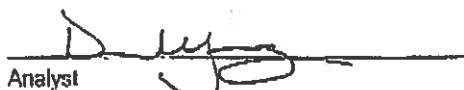
Duplicate Conc. (ug/Kg)	Sample	Duplicate	% Diff	Accept Range	Detect Limit
Benzene	1.1	1.0	9.1%	0 - 30%	0.9
Toluene	8.6	8.4	2.3%	0 - 30%	1.0
Ethylbenzene	1.7	1.7	0.0%	0 - 30%	1.0
p,m-Xylene	3.9	3.6	7.7%	0 - 30%	1.2
o-Xylene	3.6	3.5	2.8%	0 - 30%	0.9

Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	1.1	50.0	50.6	99.0%	39 - 150
Toluene	8.6	50.0	58.2	99.3%	48 - 148
Ethylbenzene	1.7	50.0	51.2	99.0%	32 - 160
p,m-Xylene	3.9	100	102	98.1%	46 - 148
o-Xylene	3.6	50.0	53.3	99.4%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1998.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photolionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1998.

Comments: QA/QC for Samples 45476, 45488, and 45489.


Analyst


Review

ENVIROTECH LABS**PRACTICAL SOLUTIONS FOR A BETTER TOMORROW****TRACE METAL ANALYSIS**

Client:	ConocoPhillips	Project #:	96052-0026
Sample ID:	Callison 34-9 29-2A	Date Reported:	05-20-08
Laboratory Number:	45488	Date Sampled:	05-09-08
Chain of Custody:	3957	Date Received:	05-16-08
Sample Matrix:	Soil	Date Analyzed:	05-19-08
Preservative:	Cool	Date Digested:	05-19-08
Condition:	Intact	Analysis Needed:	Total Metals

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)	TCLP Regulatory Level (mg/Kg)
Arsenic	0.032	0.001	5.0
Barium	9.46	0.001	100
Cadmium	0.002	0.001	1.0
Chromium	1.32	0.001	5.0
Lead	0.196	0.001	5.0
Mercury	ND	0.001	0.2
Selenium	0.023	0.001	1.0
Silver	ND	0.001	5.0

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission Spectroscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C
section 261.24, August 24, 1998.

Comments: Drilling Pit Sample.

Analyst

Review

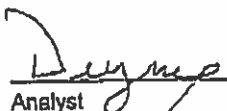
ENVIROTECH LABS**PRACTICAL SOLUTIONS FOR A BETTER TOMORROW****CATION / ANION ANALYSIS**

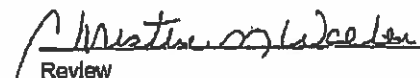
Client:	ConocoPhillips	Project #:	96052-0026
Sample ID:	Carlson 34-9 29-2A	Date Reported:	05-20-08
Laboratory Number:	45488	Date Sampled:	05-09-08
Chain of Custody:	3957	Date Received:	05-16-08
Sample Matrix:	Soil Extract	Date Extracted:	05-16-08
Preservative:	Cool	Date Analyzed:	05-19 / 05-20-08
Condition:	Intact		

Parameter	Analytical Result	Units		
pH	10.36	s.u.		
Conductivity @ 25° C	1,100	umhos/cm		
Total Dissolved Solids @ 180C	701	mg/L		
Total Dissolved Solids (Calc)	691	mg/L		
SAR	12.1	ratio		
Total Alkalinity as CaCO3	316	mg/L		
Total Hardness as CaCO3	100	mg/L		
Bicarbonate as HCO3	76.0	mg/L	1.25	meq/L
Carbonate as CO3	240	mg/L	8.00	meq/L
Hydroxide as OH	<0.1	mg/L	0.00	meq/L
Nitrate Nitrogen	6.0	mg/L	0.10	meq/L
Nitrite Nitrogen	0.038	mg/L	0.00	meq/L
Chloride	72.0	mg/L	2.03	meq/L
Fluoride	<0.1	mg/L	0.00	meq/L
Phosphate	69.0	mg/L	2.18	meq/L
Sulfate	32.0	mg/L	0.67	meq/L
Iron	1.93	mg/L	0.07	meq/L
Calcium	40.0	mg/L	2.00	meq/L
Magnesium	<0.1	mg/L	0.00	meq/L
Potassium	3.1	mg/L	0.08	meq/L
Sodium	277	mg/L	12.05	meq/L
Cations			14.19	meq/L
Anions			14.22	meq/L
Cation/Anion Difference			0.18%	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: Drilling Pit Sample.


Analyst


Review

CHAIN OF CUSTODY RECORD

[illegible]

Gregg Wurtz (505) 320-265.

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER FUTURE

TRACE METAL ANALYSIS

Client:	ConocoPhillips	Project #:	96052-1174
Sample ID:	Boren 24-9 #29-3A	Date Reported:	02-29-08
Laboratory Number:	44341	Date Sampled:	02-28-08
Chain of Custody:	3920	Date Received:	02-28-08
Sample Matrix:	Mud	Date Analyzed:	02-29-08
Preservative:	Cool	Date Digested:	02-29-08
Condition:	Intact	Analysis Needed:	Total Metals

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)	TCLP Regulatory Level x 20 (mg/Kg)
Arsenic	0.263	0.001	100
Barium	14.1	0.001	2,000
Cadmium	0.009	0.001	20.0
Chromium	3.24	0.001	100
Lead	0.489	0.001	100
Mercury	ND	0.001	4.00
Selenium	0.004	0.001	20.0
Silver	ND	0.001	100

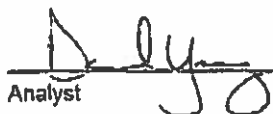
ND - Parameter not detected at the stated detection limit.

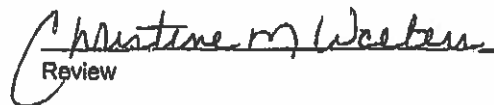
References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission Spectroscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C
section 261.24, August 24, 1998.

Comments: Sunnyside, CO.


Analyst


Review

ENVIROTECH LABS**PRACTICAL SOLUTIONS FOR WATER & SOIL CONTAMINATION****TRACE METAL ANALYSIS**

Client:	ConocoPhillips	Project #:	96052-1174
Sample ID:	Background	Date Reported:	02-29-08
Laboratory Number:	44342	Date Sampled:	02-28-08
Chain of Custody:	3920	Date Received:	02-28-08
Sample Matrix:	Mud	Date Analyzed:	02-29-08
Preservative:	Cool	Date Digested:	02-29-08
Condition:	Intact	Analysis Needed:	Total Metals

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)	TCLP Regulatory Level x 20 (mg/Kg)
Arsenic	0.412	0.001	100
Barium	13.2	0.001	2,000
Cadmium	0.032	0.001	20.0
Chromium	1.32	0.001	100
Lead	0.098	0.001	100
Mercury	ND	0.001	4.00
Selenium	0.009	0.001	20.0
Silver	ND	0.001	100

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission Spectroscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C
section 261.24, August 24, 1998.

Comments: Sunnyside, CO.

Analyst

Review

ENVIROTECH LABS

12 PRACTICAL SOLUTIONS FOR AMBIENT AIR QUALITY

EPA Method 8260B

Volatile Organic Compounds by GC/MS

Client:	ConocoPhillips	Project #:	96052-1174
Sample ID:	Boren 34-9 #29-3A	Date Reported:	03-05-08
Chain of Custody:	3920	Date Sampled:	02-28-08
Laboratory Number:	44341	Date Received:	02-28-08
Sample Matrix:	Mud	Date Analyzed:	03-04-08
Preservative:	Cool	Date Extracted:	03-03-08
Condition:	Cool and Intact	Analysis Requested:	8260 VOC

Parameter	Concentration	Units	Det. Limit	Dilution Factor
Benzene	ND	(ug/Kg)	1.0	1
Toluene	20.3	(ug/Kg)	1.0	1
Ethylbenzene	ND	(ug/Kg)	1.0	1
Xylenes, Total	21.8	(ug/Kg)	1.0	1
Methyl tert-butyl ether (MTBE)	ND	(ug/Kg)	1.0	1
1,2,4-Trimethylbenzene	33.9	(ug/Kg)	1.0	1
1,3,5-Trimethylbenzene	118	(ug/Kg)	1.0	1
1,2-Dichloroethane (EDC)	ND	(ug/Kg)	1.0	1
1,2-Dibromoethane (EDB)	ND	(ug/Kg)	1.0	1
Naphthalene	ND	(ug/Kg)	1.0	1
1-Methylnaphthalene	ND	(ug/Kg)	2.0	1
2-Methylnaphthalene	ND	(ug/Kg)	2.0	1
Bromobenzene	ND	(ug/Kg)	1.0	1
Bromochloromethane	ND	(ug/Kg)	1.0	1
Bromodichloromethane	ND	(ug/Kg)	1.0	1
Bromoform	ND	(ug/Kg)	1.0	1
Bromomethane	ND	(ug/Kg)	1.0	1
Carbon Tetrachloride	ND	(ug/Kg)	1.0	1
Chlorobenzene	ND	(ug/Kg)	1.0	1
Chloroethane	ND	(ug/Kg)	2.0	1
Chloroform	ND	(ug/Kg)	1.0	1
Chloromethane	ND	(ug/Kg)	1.0	1
2-Chlorotoluene	ND	(ug/Kg)	1.0	1
4-Chlorotoluene	ND	(ug/Kg)	1.0	1
cis-1,2-Dichloroethene	ND	(ug/Kg)	1.0	1
cis-1,3-Dichloropropene	ND	(ug/Kg)	1.0	1
1,2-Dibromo-3-chloropropane	ND	(ug/Kg)	2.0	1
Dibromochloromethane	ND	(ug/Kg)	1.0	1
Dibromoethane	ND	(ug/Kg)	2.0	1
1,2-Dichlorobenzene	ND	(ug/Kg)	1.0	1
1,3-Dichlorobenzene	ND	(ug/Kg)	1.0	1
1,4-Dichlorobenzene	ND	(ug/Kg)	1.0	1
Dichlorodifluoromethane	ND	(ug/Kg)	1.0	1
1,1-Dichloroethane	ND	(ug/Kg)	1.0	1
1,1-Dichloroethene	ND	(ug/Kg)	1.0	1
1,2-Dichloropropane	ND	(ug/Kg)	1.0	1
1,3-Dichloropropane	ND	(ug/Kg)	1.0	1
2,2-Dichloropropane	ND	(ug/Kg)	1.0	1

ENVIROTECH LABS**PERFORMANCE SOLUTIONS FOR A BETTER TOMORROW****EPA Method 8260B****Volatile Organic Compounds by GC/MS**

Client: ConocoPhillips
 Sample ID: Boren 34-9 #29-3A
 Laboratory Number: 44341

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Parameter	Concentration (ug/Kg)	Units	Det. Limit	Dilution Factor
1,1-Dichloropropene	ND	(ug/Kg)	1.0	1
Hexachlorobutadiene	ND	(ug/Kg)	1.0	1
Isopropylbenzene	ND	(ug/Kg)	1.0	1
4-Isopropyltoluene	23.5	(ug/Kg)	1.0	1
Methylene Chloride	ND	(ug/Kg)	3.0	1
n-Butylbenzene	40.6	(ug/Kg)	1.0	1
n-Propylbenzene	ND	(ug/Kg)	1.0	1
sec-Butylbenzene	26.5	(ug/Kg)	1.0	1
Styrene	ND	(ug/Kg)	1.0	1
tert-Butylbenzene	ND	(ug/Kg)	1.0	1
Tetrachloroethene (PCE)	ND	(ug/Kg)	1.0	1
1,1,1,2-Tetrachloroethane	ND	(ug/Kg)	1.0	1
1,1,2,2-Tetrachloroethane	ND	(ug/Kg)	1.0	1
trans-1,2-Dichloroethane	ND	(ug/Kg)	1.0	1
trans-1,3-Dichloropropene	ND	(ug/Kg)	1.0	1
Trichloroethane (TCE)	ND	(ug/Kg)	1.0	1
Trichlorofluoromethane	ND	(ug/Kg)	1.0	1
1,2,3-Trichlorobenzene	ND	(ug/Kg)	1.0	1
1,2,4-Trichlorobenzene	ND	(ug/Kg)	1.0	1
1,1,1-Trichloroethane	ND	(ug/Kg)	1.0	1
1,1,2-Trichloroethane	ND	(ug/Kg)	1.0	1
1,2,3-Trichloropropane	ND	(ug/Kg)	2.0	1
Vinyl Chloride	ND	(ug/Kg)	2.0	1

Surrogates:	Rec. Limits			
Dibromofluoromethane	99.0	% Recovery	78.6-115	1
1,2-Dichloroethane-d4	92.5	% Recovery	74.6-123	1
Toluene-d8	96.3	% Recovery	84.2-115	1
4-Bromofluorobenzene	97.9	% Recovery	78.6-115	1

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste,
 SW-846, USEPA, July 1992.
 Method 8260, Volatile Organic Compounds by Gas Chromatography / Mass
 Spectrometry, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

Comments: Sunnyside, CO

Analyst

Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER ENVIRONMENT

EPA Method 8260B

Volatile Organic Compounds by GC/MS

Client:	ConocoPhillips	Project #:	96052-1174
Sample ID:	Background	Date Reported:	03-05-08
Chain of Custody:	3920	Date Sampled:	02-28-08
Laboratory Number:	44342	Date Received:	02-28-08
Sample Matrix:	Mud	Date Analyzed:	03-04-08
Preservative:	Cool	Date Extracted:	03-03-08
Condition:	Cool and Intact	Analysis Requested:	8260 VOC

Parameter	Concentration	Units	Det. Limit	Dilution Factor
Benzene	ND	(ug/Kg)	1.0	1
Toluene	ND	(ug/Kg)	1.0	1
Ethylbenzene	ND	(ug/Kg)	1.0	1
Xylenes, Total	ND	(ug/Kg)	1.0	1
Methyl tert-butyl ether (MTBE)	ND	(ug/Kg)	1.0	1
1,2,4-Trimethylbenzene	ND	(ug/Kg)	1.0	1
1,3,5-Trimethylbenzene	ND	(ug/Kg)	1.0	1
1,2-Dichloroethane (EDC)	ND	(ug/Kg)	1.0	1
1,2-Dibromoethane (EDB)	ND	(ug/Kg)	1.0	1
Naphthalene	ND	(ug/Kg)	1.0	1
1-Methylnaphthalene	ND	(ug/Kg)	2.0	1
2-Methylnaphthalene	ND	(ug/Kg)	2.0	1
Bromobenzene	ND	(ug/Kg)	1.0	1
Bromochloromethane	ND	(ug/Kg)	1.0	1
Bromodichloromethane	ND	(ug/Kg)	1.0	1
Bromoform	ND	(ug/Kg)	1.0	1
Bromomethane	ND	(ug/Kg)	1.0	1
Carbon Tetrachloride	ND	(ug/Kg)	1.0	1
Chlorobenzene	ND	(ug/Kg)	1.0	1
Chloroethane	ND	(ug/Kg)	2.0	1
Chloroform	ND	(ug/Kg)	1.0	1
Chloromethane	ND	(ug/Kg)	1.0	1
2-Chlorotoluene	ND	(ug/Kg)	1.0	1
4-Chlorotoluene	ND	(ug/Kg)	1.0	1
cis-1,2-Dichloroethene	ND	(ug/Kg)	1.0	1
cis-1,3-Dichloropropene	ND	(ug/Kg)	1.0	1
1,2-Dibromo-3-chloropropane	ND	(ug/Kg)	2.0	1
Dibromochloromethane	ND	(ug/Kg)	1.0	1
Dibromoethane	ND	(ug/Kg)	2.0	1
1,2-Dichlorobenzene	ND	(ug/Kg)	1.0	1
1,3-Dichlorobenzene	ND	(ug/Kg)	1.0	1
1,4-Dichlorobenzene	ND	(ug/Kg)	1.0	1
Dichlorodifluoromethane	ND	(ug/Kg)	1.0	1
1,1-Dichloroethane	ND	(ug/Kg)	1.0	1
1,1-Dichloroethene	ND	(ug/Kg)	1.0	1
1,2-Dichloropropane	ND	(ug/Kg)	1.0	1
1,3-Dichloropropane	ND	(ug/Kg)	1.0	1
2,2-Dichloropropane	ND	(ug/Kg)	1.0	1

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR THE ENVIRONMENTAL PROFESSION

EPA Method 8260B
Volatile Organic Compounds by GC/MS

Client: ConocoPhillips
Sample ID: Background
Laboratory Number: 44342

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Parameter	Concentration (ug/Kg)	Units	Det. Limit	Dilution Factor
1,1-Dichloropropene	ND	(ug/Kg)	1.0	1
Hexachlorobutadiene	ND	(ug/Kg)	1.0	1
Isopropylbenzene	ND	(ug/Kg)	1.0	1
4-Isopropyltoluene	ND	(ug/Kg)	1.0	1
Methylene Chloride	ND	(ug/Kg)	3.0	1
n-Butylbenzene	ND	(ug/Kg)	1.0	1
n-Propylbenzene	ND	(ug/Kg)	1.0	1
sec-Butylbenzene	ND	(ug/Kg)	1.0	1
Styrene	ND	(ug/Kg)	1.0	1
tert-Butylbenzene	ND	(ug/Kg)	1.0	1
Tetrachloroethene (PCE)	ND	(ug/Kg)	1.0	1
1,1,1,2-Tetrachloroethane	ND	(ug/Kg)	1.0	1
1,1,2,2-Tetrachloroethane	ND	(ug/Kg)	1.0	1
trans-1,2-Dichloroethene	ND	(ug/Kg)	1.0	1
trans-1,3-Dichloropropene	ND	(ug/Kg)	1.0	1
Trichloroethene (TCE)	ND	(ug/Kg)	1.0	1
Trichlorofluoromethane	ND	(ug/Kg)	1.0	1
1,2,3-Trichlorobenzene	ND	(ug/Kg)	1.0	1
1,2,4-Trichlorobenzene	ND	(ug/Kg)	1.0	1
1,1,1-Trichloroethane	ND	(ug/Kg)	1.0	1
1,1,2-Trichloroethane	ND	(ug/Kg)	1.0	1
1,2,3-Trichloropropane	ND	(ug/Kg)	2.0	1
Vinyl Chloride	ND	(ug/Kg)	2.0	1

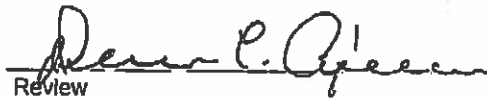
Surrogates:			Rec. Limits	
Dibromofluoromethane	99.9	% Recovery	78.6-115	1
1,2-Dichloroethane-d4	99.8	% Recovery	74.6-123	1
Toluene-d8	99.4	% Recovery	84.2-115	1
4-Bromofluorobenzene	99.7	% Recovery	78.6-115	1

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste,
SW-846, USEPA, July 1992.
Method 8260, Volatile Organic Compounds by Gas Chromatography / Mass
Spectrometry, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

Comments: Sunnyside, CO


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR WASTE GENERATION OFFLOW

QUALITY ASSURANCE / QUALITY CONTROL

DOCUMENTATION

ENVIROTECH LABS

Practical Solutions for Environmental Problems

EPA Method 8260B Volatile Organic Compounds by GC/MS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	03-05-08
Laboratory Number:	03-04 VOA	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	03-04-08
Condition:	N/A	Analysis Requested:	8260 VOC

Parameter	Concentration (ug/L)	Units	Det. Limit	Dilution Factor
Benzene	ND	(ug/L)	1.0	1
Toluene	ND	(ug/L)	1.0	1
Ethylbenzene	ND	(ug/L)	1.0	1
Xylenes, Total	ND	(ug/L)	1.0	1
Methyl tert-butyl ether (MTBE)	ND	(ug/L)	1.0	1
1,2,4-Trimethylbenzene	ND	(ug/L)	1.0	1
1,3,5-Trimethylbenzene	ND	(ug/L)	1.0	1
1,2-Dichloroethane (EDC)	ND	(ug/L)	1.0	1
1,2-Dibromoethane (EDB)	ND	(ug/L)	1.0	1
Naphthalene	ND	(ug/L)	1.0	1
1-Methylnaphthalene	ND	(ug/L)	2.0	1
2-Methylnaphthalene	ND	(ug/L)	2.0	1
Bromobenzene	ND	(ug/L)	1.0	1
Bromochloromethane	ND	(ug/L)	1.0	1
Bromodichloromethane	ND	(ug/L)	1.0	1
Bromoform	ND	(ug/L)	1.0	1
Bromomethane	ND	(ug/L)	1.0	1
Carbon Tetrachloride	ND	(ug/L)	1.0	1
Chlorobenzene	ND	(ug/L)	1.0	1
Chloroethane	ND	(ug/L)	2.0	1
Chloroform	ND	(ug/L)	1.0	1
Chloromethane	ND	(ug/L)	1.0	1
2-Chlorotoluene	ND	(ug/L)	1.0	1
4-Chlorotoluene	ND	(ug/L)	1.0	1
cis-1,2-Dichloroethene	ND	(ug/L)	1.0	1
cis-1,3-Dichloropropene	ND	(ug/L)	1.0	1
1,2-Dibromo-3-chloropropane	ND	(ug/L)	2.0	1
Dibromochloromethane	ND	(ug/L)	1.0	1
Dibromoethane	ND	(ug/L)	2.0	1
1,2-Dichlorobenzene	ND	(ug/L)	1.0	1
1,3-Dichlorobenzene	ND	(ug/L)	1.0	1
1,4-Dichlorobenzene	ND	(ug/L)	1.0	1
Dichlorodifluoromethane	ND	(ug/L)	1.0	1
1,1-Dichloroethane	ND	(ug/L)	1.0	1
1,1-Dichloroethene	ND	(ug/L)	1.0	1
1,2-Dichloropropane	ND	(ug/L)	1.0	1
1,3-Dichloropropane	ND	(ug/L)	1.0	1
2,2-Dichloropropane	ND	(ug/L)	1.0	1

ENVIROTECH LABS~~PHYSICAL SOLUTIONS FOR FINE PARTICULATE MATTER~~**EPA Method 8260B****Volatile Organic Compounds by GC/MS****Quality Assurance Report**

Client: QA/QC
 Sample ID: Laboratory Blank
 Laboratory Number: 03-04 VOA

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Parameter	Concentration (ug/L)	Units	Det. Limit	Dilution Factor
1,1-Dichloropropene	ND	(ug/L)	1.0	1
Hexachlorobutadiene	ND	(ug/L)	1.0	1
Isopropylbenzene	ND	(ug/L)	1.0	1
4-Isopropyltoluene	ND	(ug/L)	1.0	1
Methylene Chloride	ND	(ug/L)	1.0	1
n-Butylbenzene	ND	(ug/L)	1.0	1
n-Propylbenzene	ND	(ug/L)	1.0	1
sec-Butylbenzene	ND	(ug/L)	1.0	1
Styrene	ND	(ug/L)	1.0	1
tert-Butylbenzene	ND	(ug/L)	1.0	1
Tetrachloroethene (PCE)	ND	(ug/L)	1.0	1
1,1,1,2-Tetrachloroethane	ND	(ug/L)	1.0	1
1,1,2,2-Tetrachloroethane	ND	(ug/L)	1.0	1
trans-1,2-Dichloroethane	ND	(ug/L)	1.0	1
trans-1,3-Dichloropropene	ND	(ug/L)	1.0	1
Trichloroethene (TCE)	ND	(ug/L)	1.0	1
Trichlorofluoromethane	ND	(ug/L)	1.0	1
1,2,3-Trichlorobenzene	ND	(ug/L)	1.0	1
1,2,4-Trichlorobenzene	ND	(ug/L)	1.0	1
1,1,1-Trichloroethane	ND	(ug/L)	1.0	1
1,1,2-Trichloroethane	ND	(ug/L)	1.0	1
1,2,3-Trichloropropane	ND	(ug/L)	2.0	1
Vinyl Chloride	ND	(ug/L)	2.0	1

Surrogates:	Rec. Limits			
Dibromofluoromethane	98.2	% Recovery	78.6-115	1
1,2-Dichloroethane-d4	99.2	% Recovery	74.6-123	1
Toluene-d8	97.1	% Recovery	84.2-115	1
4-Bromofluorobenzene	96.9	% Recovery	78.6-115	1

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste,
 SW-846, USEPA, July 1992.
 Method 8260, Volatile Organic Compounds by Gas Chromatography / Mass
 Spectrometry, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

Comments: QA/QC for Samples 44340 - 44342, 44375 - 44376

Analyst

Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR AFFORDABLE MONITORING

EPA Method 8260B**Volatile Organic Compounds by GC/MS
Quality Assurance Report**

Client: QA/QC
 Sample ID: Matrix Spikes
 Laboratory Number: 03-04-VOA - 44340
 Sample Matrix: Mud
 Preservative: N/A
 Condition: N/A

Project #: N/A
 Date Reported: 03-05-08
 Date Sampled: N/A
 Date Received: N/A
 Date Analyzed: 03-05-08
 Analysis Requested: 8260 VOC

Spike Analyte	Sample	Units: ug/Kg		%Recovery	Recovery Limits	Det. Limit
		Added	Result			
Benzene	ND	100.0	101	101%	85.3 - 120	1.0
Toluene	ND	100.0	98.6	98.6%	73 - 123	1.0
Chlorobenzene	ND	100.0	96.8	96.8%	84.7 - 119	1.0
1,1-Dichloroethene	ND	100.0	94.5	94.5%	83.4 - 122	1.0
Trichloroethene (TCE)	ND	100.0	94.3	94.3%	78.1 - 126	1.0


Spike Duplicate Analyte	Sample	Units: ug/Kg		%Recovery	Recovery Limits	Det. Limit
		Added	Result			
Benzene	ND	100.0	98.4	98.4%	85.3 - 120	1.0
Toluene	ND	100.0	97.9	97.9%	73 - 123	1.0
Chlorobenzene	ND	100.0	96.4	96.4%	84.7 - 119	1.0
1,1-Dichloroethene	ND	100.0	95.0	95.0%	83.4 - 122	1.0
Trichloroethene (TCE)	ND	100.0	95.2	95.2%	78.1 - 126	1.0

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste,
 SW-846, USEPA, July 1992.
 Method 8260, Volatile Organic Compounds by Gas Chromatography / Mass
 Spectrometry, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

Comments: QA/QC for Samples 44040 - 44042

Analyst 

Review 

ENVIROTECH LABS

REFRACTIVE INDEX MEASUREMENTS FOR AROMATIC POLYMERIZATION

EPA Method 8260B

Volatile Organic Compounds by GC/MS Daily Calibration Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Daily Calibration	Date Reported:	03-05-08
Laboratory Number:	03-04 QA/QC	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	03-05-08
Condition:	N/A	Analysis Requested:	8260 VOC

Parameter	Concentration (ug/L)	Result	% Recovered	% Recovery Limits
Benzene	100	98.7	98.7	80 - 120
Toluene	100	99.8	99.8	80 - 120
Ethylbenzene	100	101	101	80 - 120
Xylenes, Total	100	96.5	96.5	80 - 120
Methyl tert-butyl ether (MTBE)	100	98.2	98.2	80 - 120
1,2,4-Trimethylbenzene	100	92.1	92.1	80 - 120
1,3,5-Trimethylbenzene	100	94.8	94.8	80 - 120
1,2-Dichloroethane (EDC)	100	102	102	80 - 120
1,2-Dibromoethane (EDB)	100	83.5	83.5	80 - 120
Naphthalene	100	85.8	85.8	80 - 120
1-Methylnaphthalene	100	99.8	99.8	80 - 120
2-Methylnaphthalene	100	97.6	97.6	80 - 120
Bromobenzene	100	96.3	96.3	80 - 120
Bromochloromethane	100	100	100	80 - 120
Bromodichloromethane	100	88.2	88.2	80 - 120
Bromoform	100	94.6	94.6	80 - 120
Bromomethane	100	97.2	97.2	80 - 120
Carbon Tetrachloride	100	98.7	98.7	80 - 120
Chlorobenzene	100	92.0	92.0	80 - 120
Chloroethane	100	95.9	95.9	80 - 120
Chloroform	100	102	102	80 - 120
Chloromethane	100	96.1	96.1	80 - 120
2-Chlorotoluene	100	95.4	95.4	80 - 120
4-Chlorotoluene	100	99.2	99.2	80 - 120
cis-1,2-Dichloroethane	100	90.1	90.1	80 - 120
cis-1,3-Dichloropropene	100	90.4	90.4	80 - 120
1,2-Dibromo-3-chloropropane	100	92.1	92.1	80 - 120
Dibromochloromethane	100	84.9	84.9	80 - 120
Dibromoethane	100	89.8	89.8	80 - 120
1,2-Dichlorobenzene	100	92.5	92.5	80 - 120
1,3-Dichlorobenzene	100	91.2	91.2	80 - 120
1,4-Dichlorobenzene	100	95.7	95.7	80 - 120
Dichlorodifluoromethane	100	100	100	80 - 120
1,1-Dichloroethane	100	104	104	80 - 120
1,1-Dichloroethene	100	89.2	89.2	80 - 120
1,2-Dichloropropane	100	87.6	87.6	80 - 120
1,3-Dichloropropane	100	87.2	87.2	80 - 120
2,2-Dichloropropane	100	104	104	80 - 120

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR ENVIRONMENTAL CHALLENGES

EPA Method 8260B**Volatile Organic Compounds by GC/MS
Quality Assurance Report**

Client: QA/QC
 Sample ID: Daily Calibration
 Laboratory Number: 03-04 QA/QC

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Parameter	Concentration (ug/L)	Result	% Recovered	% Recovery Limits
1,1-Dichloropropene	100	98.5	98.5	80 - 120
Hexachlorobutadiene	100	85.5	85.5	80 - 120
Isopropylbenzene	100	97.5	97.5	80 - 120
4-Isopropyltoluene	100	94.5	94.5	80 - 120
Methylene Chloride	100	92.1	92.1	80 - 120
n-Butylbenzene	100	97.6	97.6	80 - 120
n-Propylbenzene	100	91.5	91.5	80 - 120
sec-Butylbenzene	100	97.6	97.6	80 - 120
Styrene	100	102	102	80 - 120
tert-Butylbenzene	100	94.7	94.7	80 - 120
Tetrachloroethene (PCE)	100	95.9	95.9	80 - 120
1,1,1,2-Tetrachloroethane	100	89.9	89.9	80 - 120
1,1,2,2-Tetrachloroethane	100	88.1	88.1	80 - 120
trans-1,2-Dichloroethene	100	103	103	80 - 120
trans-1,3-Dichloropropene	100	87.9	87.9	80 - 120
Trichloroethene (TCE)	100	95.2	95.2	80 - 120
Trichlorofluoromethane	100	89.1	89.1	80 - 120
1,2,3-Trichlorobenzene	100	91.1	91.1	80 - 120
1,2,4-Trichlorobenzene	100	88.0	88.0	80 - 120
1,1,1-Trichloroethane	100	101	101	80 - 120
1,1,2-Trichloroethane	100	88.6	88.6	80 - 120
1,2,3-Trichloropropane	100	98.6	98.6	80 - 120
Vinyl Chloride	100	94.1	94.1	80 - 120

Surrogates:			Rec. Limits
Dibromofluoromethane	98.2	% Recovery	78.6-115
1,2-Dichloroethane-d4	98.8	% Recovery	74.6-123
Toluene-d8	99.2	% Recovery	84.2-115
4-Bromofluorobenzene	98.5	% Recovery	78.6-115

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste,
 SW-846, USEPA, July 1992.
 Method 8260, Volatile Organic Compounds by Gas Chromatography / Mass
 Spectrometry, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

Comments: QA/QC for Samples 44340 - 44342, 44375 - 44376


 Analyst


 Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER FUTURE FROM OFFHOLD

CATION / ANION ANALYSIS

Client:	ConocoPhillips	Project #:	96052-1174
Sample ID:	Background	Date Reported:	03-05-08
Laboratory Number:	44342	Date Sampled:	02-28-08
Chain of Custody:	3920	Date Received:	02-28-08
Sample Matrix:	Mud Extract	Date Extracted:	02-28-08
Preservative:	Cool	Date Analyzed:	02-29-08
Condition:	Intact		

Parameter	Analytical Result	Units		
pH	7.67	S.U.		
Conductivity @ 25° C	356	umhos/cm		
Total Dissolved Solids @ 180C	302	mg/L		
Total Dissolved Solids (Calc)	295	mg/L		
SAR	2.0	ratio		
Total Alkalinity as CaCO3	110	mg/L		
Total Hardness as CaCO3	118	mg/L		
Bicarbonate as HCO3	110	mg/L	1.80	meq/L
Carbonate as CO3	<0.1	mg/L	0.00	meq/L
Hydroxide as OH	<0.1	mg/L	0.00	meq/L
Nitrate Nitrogen	2.4	mg/L	0.04	meq/L
Nitrite Nitrogen	0.005	mg/L	0.00	meq/L
Chloride	30.0	mg/L	0.85	meq/L
Fluoride	0.06	mg/L	0.00	meq/L
Phosphate	22.2	mg/L	0.70	meq/L
Sulfate	68.0	mg/L	1.42	meq/L
Iron	0.190	mg/L	0.01	meq/L
Calcium	36.8	mg/L	1.84	meq/L
Magnesium	6.35	mg/L	0.52	meq/L
Potassium	11.6	mg/L	0.30	meq/L
Sodium	49.5	mg/L	2.15	meq/L
Cations			4.81	meq/L
Anions			4.81	meq/L
Cation/Anion Difference			0.01%	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: Sunnyside, CO

Analyst

Review

CHAIN OF CUSTODY RECORD

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“PRACTICAL SOLUTIONS FOR A BETTER TOMORROW”

EPA Method 8015 Modified

Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	05-19-08 QA/QC	Date Reported:	05-20-08
Laboratory Number:	45476	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	05-19-08
Condition:	N/A	Analysts Requested:	TPH

Calibration			
Gasoline Range C5 - C10	1.0009E+003	1.0013E+003	0.04%
Diesel Range C10 - C28	9.9526E+002	9.9566E+002	0.04%
Acceptance Range: 0 - 15%			

Blank Conc. (mg/kg)			
Gasoline Range C5 - C10	ND	0.2	0.2
Diesel Range C10 - C28	ND	0.1	0.2
Total Petroleum Hydrocarbons			
Detection Limit			

Duplicate Conc. (mg/kg)			
Gasoline Range C5 - C10	ND	0.0%	0 - 30%
Diesel Range C10 - C28	1.4	0.0%	0 - 30%
Acceptance Range: 0 - 30%			

Spike Conc. (mg/kg)			
Gasoline Range C5 - C10	ND	250	101%
Diesel Range C10 - C28	1.4	251	100%
Acceptance Range: 75 - 125%			

ND - Parameter not detected at the stated detection limit

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for Samples 45476, 45479, and 45489.

Analyst: 
Review: 

ENVIROTECH LABS

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EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons
Quality Assurance Report

Client: QA/QC
Sample ID: 03-03-08 QA/QC
Laboratory Number: 44340
Sample Matrix: Methylene Chloride
Preservative: N/A
Condition: N/A
Project #: N/A
Date Reported: 03-03-08
Date Sampled: N/A
Date Received: N/A
Date Analyzed: 03-03-08
Analysis Requested: TPH

Gasoline Range C6 - C10	05-07-07	9.9171E+002	8.9211E+002	0.04%	0 - 15%
Diesel Range C10 - C28	05-07-07	1.0112E+003	1.0116E+003	0.04%	0 - 15%

Blank Conc. (mg/L)	Concentration	0.2	0.1	0.2
Gasoline Range C5 - C10	ND	ND	0.1	0.2
Diesel Range C10 - C28	ND	ND	0.1	0.2
Total Petroleum Hydrocarbons	ND	ND	0.1	0.2

Spiked Conc. (mg/kg)	Spiked Conc.	ND	ND	0.0%	0 - 30%
Gasoline Range C5 - C10	ND	ND	ND	0.0%	0 - 30%
Diesel Range C10 - C28	4.1	4.1	4.1	0.0%	0 - 30%

Spiked Conc. (mg/kg)	Sample	Spiked Amount	Spiked Amount	Spiked Amount	Spiked Amount	Spiked Amount
Gasoline Range C5 - C10	ND	250	250	250	100%	75 - 125%
Diesel Range C10 - C28	4.1	250	254	254	99.9%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for Samples 44340 - 44342, 44346 - 44351, 44377

Analyst: 
Review: 

CHAIN OF CUSTODY RECORD

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905. CLOSURE OF PITS, AND BURIED OR PARTIALLY BURIED PRODUCED WATER VESSELS.

b. Lined pits and buried or partially buried produced water vessels:

1) Operators shall ensure that soils and ground water meet the allowable concentrations of **Table 910-1**.

(2) Pit evacuation. Prior to backfilling and site reclamation, E&P waste shall be treated or disposed in accordance with **Rule 907**.

(3) Liners shall be disposed as follows:

A. Synthetic liner disposal. On irrigated crop land, liner material shall be removed and disposed in accordance with applicable solid waste rules.

On non-irrigated crop land and on non-crop land, liner material may be left in place with surface owner approval.

e. Unlined drilling pits. Unlined drilling pits shall be closed and reclaimed in accordance with the **1000 Series rules**.

907. MANAGEMENT OF E&P WASTE

d. Drilling fluids.

(1) Drilling pit fluid recycling. Drilling pit contents may be recycled to another drilling pit consistent with **Rule 903**.

(2) Drilling fluids treatment and disposal. Drilling fluids may be treated or disposed as follows:

A. Injection into a Class II well permitted in accordance with **Rule 325**;

B. Disposal at a commercial solid waste disposal facility; or

C. Land treatment or land application at a centralized E&P waste management facility permitted in accordance with **Rule 908**.

(3) Additional authorized disposal of water-based bentonitic drilling fluids. Water-based bentonitic drilling fluids may be disposed as follows:

A. Drying and burial in drilling pits on non-crop land; or

B Land application as follows:

i. **Applicability.** Acceptable methods of land application include, but are not limited to, production facility construction and maintenance, lease and farm road maintenance, or lining of stock ponds and irrigation ditches.

ii. **Land application requirements.** The average thickness of water-based bentonitic drilling fluid waste applied shall be no more than three (3) inches prior to incorporation. The waste shall be applied to prevent ponding or erosion and shall be incorporated as a beneficial amendment into the native soils as soon as practicable. The resulting concentrations shall not exceed those in **Table 910-1**.

- iii. Surface owner approval. Operators shall obtain written authorization from the surface owner prior to land application of water-based bentonitic drilling fluids.
- iv. Operator obligations. Operators with control and authority over the wells from which the water-based bentonitic drilling fluid wastes are obtained retain responsibility for the land application operation, and shall diligently cooperate with the Director in responding to complaints regarding land application of water-based bentonitic drilling fluids.
- v. Approval. Prior Director approval is not required for reuse of water-based bentonitic drilling fluids for land application as a soil amendment or lining material.

1003. INTERIM RECLAMATION

d. Drilling pit closure. As part of interim reclamation, drilling pits shall be closed in the following manner:

(1) Drilling pit closure on crop land. *On crop land water-based bentonitic drilling fluids, except de minimis amounts, shall be removed from the drilling pit and disposed of in accordance with the 900 Series rules.* Drilling pit reclamation, including the disposal of drilling fluids and cuttings, shall be performed in a manner so as to not result in the formation of an impermeable barrier. Any cuttings removed from the pit for drying shall be returned to the pit prior to backfilling, and no more than de minimis amounts may be incorporated into the surface materials. After the drilling pit is sufficiently dry, the pit shall be backfilled. The backfilling of the drilling pit shall be done to return the soils to their original relative positions.

(2) Drilling pit closure on non-crop land. All drilling fluids shall be disposed of in accordance with the 900 Series rules. After the drilling pit is sufficiently dry, the pit shall be backfilled. Materials removed from the pit for drying shall be returned to the pit prior to the backfilling. No more than de minimis amounts may be incorporated into the surface materials. The backfilling of the drilling pit will be done to return the soils to their original relative positions so that the muds and associated solids will be confined to the pit and not squeezed out and incorporated in the surface materials.

(3) Minimum cover. On crop lands, a minimum of three (3) feet of backfill cover shall be applied over any remaining drilling pit contents. As to both crop lands and non-crop lands, during the two (2) year period following drilling pit closure, if subsidence occurs over the closed drilling pit location additional topsoil shall be added to the depression and the land shall be re-leveled as close to its original contour as practicable.

Parameter mg/kg	Pit	Bkgrd	02/28/2008 Table 910-1	
As	0.263	0.412	41	
Ba	14.1	13.2	180,000	
Cd	0.009	0.032	26	
Cr	3.24	1.32	1,500	
Pb	0.489	0.098	300	
Hg	ND	ND	17	
Se	0.0004	0.0009		
Ag	ND	ND	100	
ug/kg				
Benzene	ND	ND		
toluene	20.3	ND		
Ethylbenzene	ND	ND		
Xylenes, T	21.8	ND		
1,2,4-Trimethylbenzene	33.9	ND		
1,3,5-Trimethylbenzene	118	ND		
4-Isopropyltoluene	23.5	ND		
n-Butylbenzene	40.6	ND		
sec-Butylbenzene	26.5	ND		
pH	10.42	7.67	6-9	
EC	627	356	2x bkgrd =	712
TDS	474	302		
TDS (calc)	485	295		
SAR	3.3	2	<12	
Alk CaCO3	375	110		
Hardness CaCO3	182	118		
Bicarb HCO3	375	110		
Carb CO3	<0.1	<0.1		
Hydroxide OH	<0.1	<0.1		
Nitrate	1.5	2.4		
Nitrite	0.05	0.005		
Cl	38	30		
Fl	<0.01	0.06		
Phosphate	<0.1	22.2		
Sulfate	45	68		
Fe	11.7	0.19		
Calcium	56	36.8		
Magnesium	10.3	6.35		
Potassium	3.56	11.6		
Sodium	102	49.5		

TPH Gas 1.9
 TPH Diesel 38
 TPH 39.9
 ND
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ENVIROTECH LABS

ANALYTICAL SOLUTIONS FOR THE ENERGY INDUSTRY

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

Client:	ConocoPhillips	Project #:	96052-1174
Sample ID:	Boren 34-8 #29-3A	Date Reported:	03-03-08
Laboratory Number:	44341	Date Sampled:	02-28-08
Chain of Custody No:	3920	Date Received:	02-28-08
Sample Matrix:	Mud	Date Extracted:	02-29-08
Preservative:	Cool	Date Analyzed:	03-03-08
Condition:	Cool & Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	1.9	0.2
Diesel Range (C10 - C28)	38.0	0.1
Total Petroleum Hydrocarbons	39.9	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Sunnyside, CO

Analyst

Review

ENVIROTECH LABS

PRAGMATIC SOLUTIONS FOR WASTE TREATMENT ORDERS

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

Client:	ConocoPhillips	Project #:	96052-1174
Sample ID:	Background	Date Reported:	03-03-08
Laboratory Number:	44342	Date Sampled:	02-28-08
Chain of Custody No:	3920	Date Received:	02-28-08
Sample Matrix:	Mud	Date Extracted:	02-29-08
Preservative:	Cool	Date Analyzed:	03-03-08
Condition:	Cool & Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Sunnyside, CO


Analyst


Review

ENVIROTECH LABS

PRACICAL SOLUTIONS FOR THE ENVIRONMENT

CATION / ANION ANALYSIS


Client:	ConocoPhillips	Project #:	96052-1174
Sample ID:	Boren 34-9 #29-3A	Date Reported:	03-05-08
Laboratory Number:	44341	Date Sampled:	02-28-08
Chain of Custody:	3920	Date Received:	02-28-08
Sample Matrix:	Mud Extract	Date Extracted:	02-28-08
Preservative:	Cool	Date Analyzed:	02-29-08
Condition:	Intact		

Parameter	Analytical Result	Units		
pH	10.42	s.u.		
Conductivity @ 25° C	627	umhos/cm		
Total Dissolved Solids @ 180C	474	mg/L		
Total Dissolved Solids (Calc)	485	mg/L		
SAR	3.3	ratio		
Total Alkalinity as CaCO3	375	mg/L		
Total Hardness as CaCO3	182	mg/L		
Bicarbonate as HCO3	375	mg/L	6.15	meq/L
Carbonate as CO3	<0.1	mg/L	0.00	meq/L
Hydroxide as OH	<0.1	mg/L	0.00	meq/L
Nitrate Nitrogen	1.5	mg/L	0.02	meq/L
Nitrite Nitrogen	0.050	mg/L	0.00	meq/L
Chloride	38.0	mg/L	1.07	meq/L
Fluoride	<.01	mg/L	0.00	meq/L
Phosphate	<0.1	mg/L	0.00	meq/L
Sulfate	45.0	mg/L	0.94	meq/L
Iron	11.7	mg/L	0.42	meq/L
Calcium	56.0	mg/L	2.79	meq/L
Magnesium	10.3	mg/L	0.84	meq/L
Potassium	3.55	mg/L	0.09	meq/L
Sodium	102	mg/L	4.44	meq/L
Cations			8.17	meq/L
Anions			8.18	meq/L
Cation/Anion Difference			0.17%	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: Sunnyside, CO


Analyst


Review