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DEC 14 06

COGCC



Mr. Randall Ferguson  
Colorado Oil and Gas Conservation Commission  
1120 Lincoln Street, Suite 801  
Denver, Co. 80203

December 11, 2006

RE: Subsurface Investigation Smits Federal 6-20A, SENW 20 T2N R66W

Mr. Ferguson

Per request from the COGCC and purchase order OE PHA 07000000022, MEC Inc performed a subsurface investigation per the proposed scope of work dated September 4, 2006. MEC inc subcontracted the probe services to DrillPro Services Inc. Soil and groundwater samples were submitted to Weld Laboratories in Greeley for analysis.

MEC Inc installed six probes on November 16, 2006. Five probes were installed to an approximate depth of 20 feet below grade level (BGL) and one probe (PB3) was advanced to four feet BGL.

The initial probe location (PB1) was selected based on information provided by COGCC that visibly impacted soils had been encountered in an exploratory gravel investigation test pit approximately 275 feet NW of the Smits Federal #6-20A well head near the following map coordinates: 40.073288138 and -104.481064502.

The location for PB2 was selected approximately 30 feet to the north. PB3 was located approximately 30 feet to the south of PB1. PB3 encountered refusal or a buried object at 4 feet BGL. The contact was slight and the probe advance was immediately stopped and relocated. PB4 was an offset location of PB3 approximately 15 feet further to the south. Based on observations from PB4, MEC Inc installed PB5 and PB6 to the east and west of PB4, instead of offsetting from the initial PB1 location as was originally planned.

The probe equipment allows for the collection of continuous cores in four foot intervals. MEC Inc inspected and described the cores in four foot intervals. Field screening for volatile compounds was performed using a photoionization detector (PID). A minimum of one PID screening sample was collected for each four foot core interval. The subsurface soils encountered in the probes was primarily medium to coarse grain sands with some gravel. Groundwater was encountered at approximately 16-17 feet BGL. Detailed geologic probe logs are included in the attachments. The map coordinates for each probe location is included in the probe logs and the attached data table.

No significant PID readings were encountered during the field screening.

A total of nine soil samples were collected for TPH 418.1 laboratory analysis. This is a slight deviation from the scope of work proposal which specified the collected of one soil sample per probe. This change was deemed necessary in the field to provide a screening of the soils at the estimated buried piping depth (3-4') and at greater depths above the water table where field observations indicated the need for sampling.

The laboratory results indicated that TPH418.1 concentrations ranged from 10.7 to 1050 milligrams per kilogram (mg/Kg), equivalent to parts per million (ppm). The TPH 418.1 concentrations for the four samples collected from PB1 and PB2 ranged from 10.7 to 114 ppm. The concentrations from the samples from PB3, PB4, PB5, and PB6 ranged from 212 to 1050 ppm. The 1050 ppm TPH 418.1 concentration result was associated with sample PB4 from a 2-4 foot depth interval. A summary of the laboratory results is presented in the attached table.

Water samples were collected from BP1, PB2, P4, PB5, and PB6. The water samples were collected from a temporary tube sampling equipment. The water samples were delivered to Weld Laboratories for BTEX analysis. The BTEX analysis results indicated that no BTEX compounds were detected.

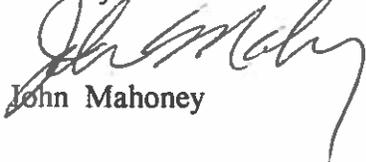
The limited remote sensing for buried objects indicate the potential presence of various buried pipe lines in the vicinity particularly around PB4. The potential presence of the buried piping indicates that the location of PB4 may have been near or at the reported location of a former tank battery.

The probe holes were backfilled and temporary flags were placed to mark the probe locations.

Borehole logs and a site plan schematic are attached.

If you have any questions, please contact me at 970-381-5951.

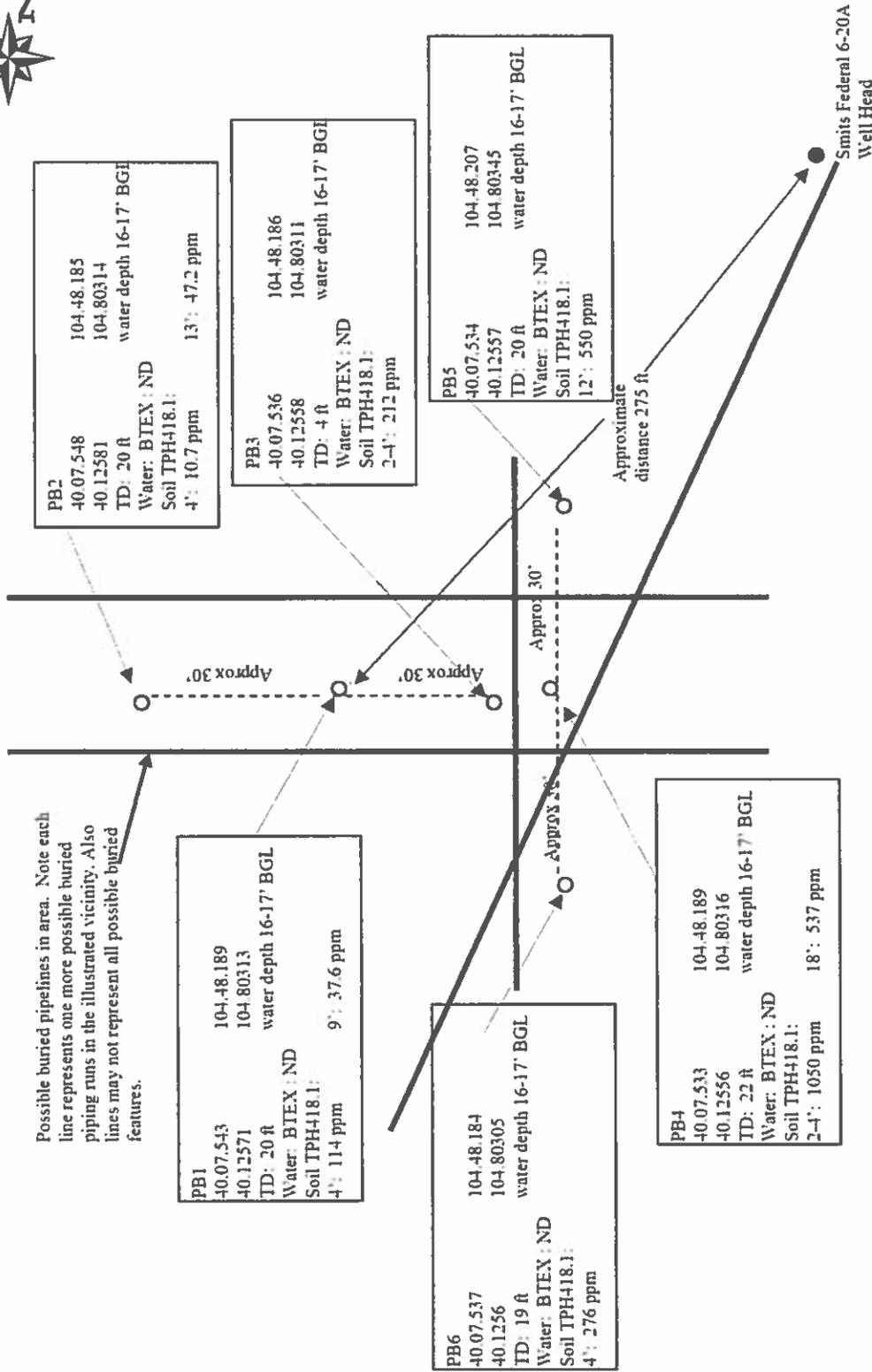
Thank you



John Mahoney



Possible buried pipelines in area. Note each line represents one more possible buried piping runs in the illustrated vicinity. Also lines may not represent all possible buried features.



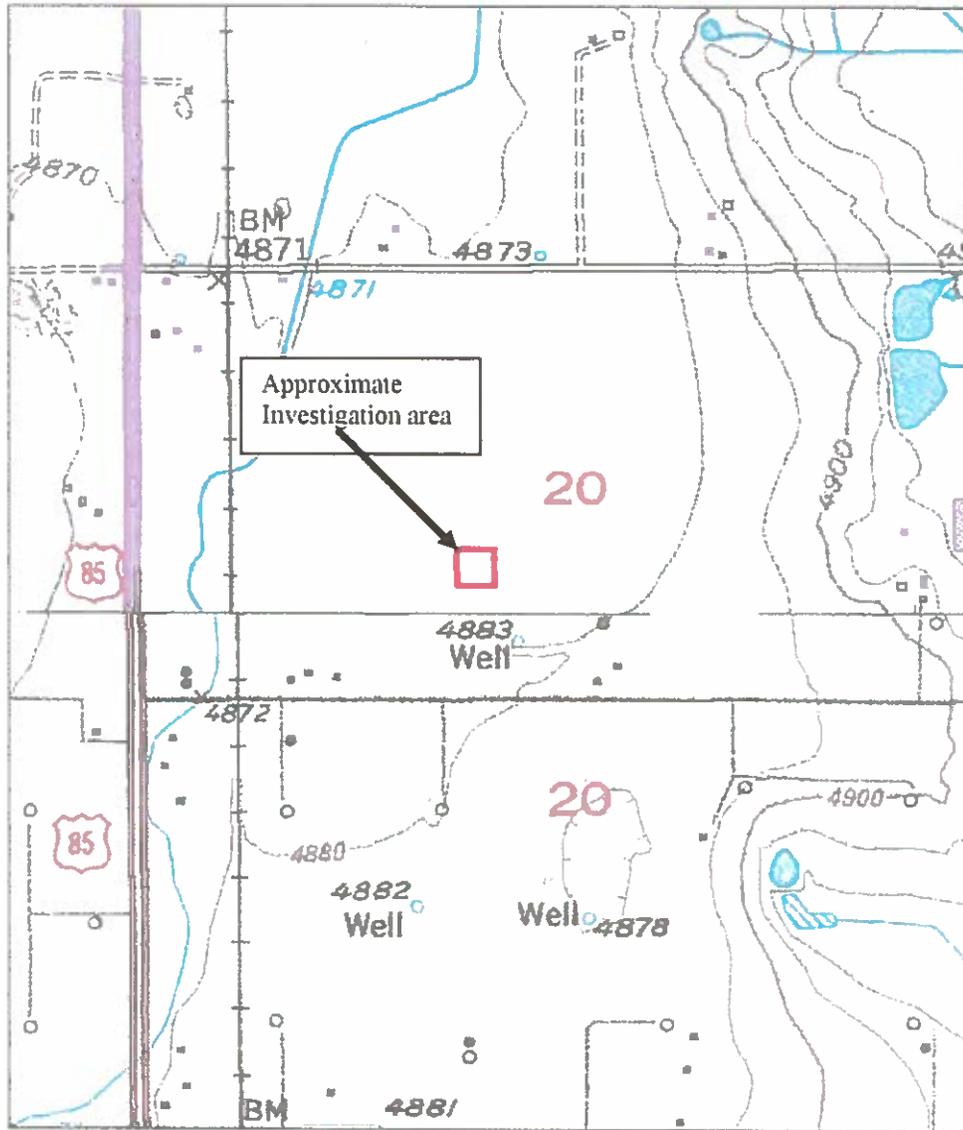
**Site Plan Schematic**

Smits Federal 6-20A  
 SENW 20 T2N R66W  
 Weld County

MAHONEY ENVIRONMENTAL CONSULTING INC  
 1601 10th Avenue  
 GREELEY, CO 80631  
 (970) 352-2644 (TEL)

November 16, 2006

Not to scale, All illustrated locations are approximate



Topograph

Source: USGS Fort Lupton quad

Project Name: Smits Federal 6-20A  
 SENW 20 T2N R66W  
 Fort Lupton, Weld County, Colorado

# WELD LABORATORIES, INC.

1527 First Avenue • Greeley, Colorado 80631  
 Phone: (970) 353-8118 • Fax: (970) 353-1671  
 www.weldlabs.com

December 7, 2006

Mahoney Environmental Consulting  
 1601 10th Ave.  
 Greeley, CO 80631

Laboratory No.: E6320-1 (page 2 of 2)

Project: COGCC Smits Federal #6-20A

Method EPA 602/SW8020 A and EPA 624/SW8015

Sample ID	Date Sampled	Date Analyzed	Benzene		Toluene		Ethylbenzene		o,p-Xylene		m-Xylene		Surrogate Recovery	
			ug/L	0.4	ug/L	0.4	ug/L	0.4	ug/L	0.4	ug/L	0.4	%	
PB1	11/16/06	11/28/06	U		U		U		U		U		76.8	
PB2	11/16/06	11/28/06	U		U		U		U		U		138	
PB3	11/16/06	11/28/06	U		U		U		U		U		131	
PB4	11/16/06	11/28/06	U		U		U		U		U		146	
PB5	11/16/06	11/28/06	U		U		U		U		U		130	

Reporting Limit: 0.4 0.4 0.4 0.4 0.4 0.4 0.4 QC Limits: 74-147

U=Compound analyzed for but not detected

J=Compound detected at a level below reporting limit.

  
 Project Manager

12/7/06  
 Date

Sampling procedures can affect the value of analytical results - customers are advised to use appropriate sampling protocol to insure samples are truly representative of the bulk sample.

**WELD LABORATORIES, INC.**

1527 First Avenue • Greeley, Colorado 80631  
Phone: (970) 353-8118 • Fax: (970) 353-1671  
www.weldlabs.com

December 7, 2006

Mahoney Environmental Consulting  
1601 10th Ave.  
Greeley, CO 80631

Laboratory No. E6320-1 (page 1 of 2)

Date Sampled: 11/16/2006

Date Received: 11/16/2006

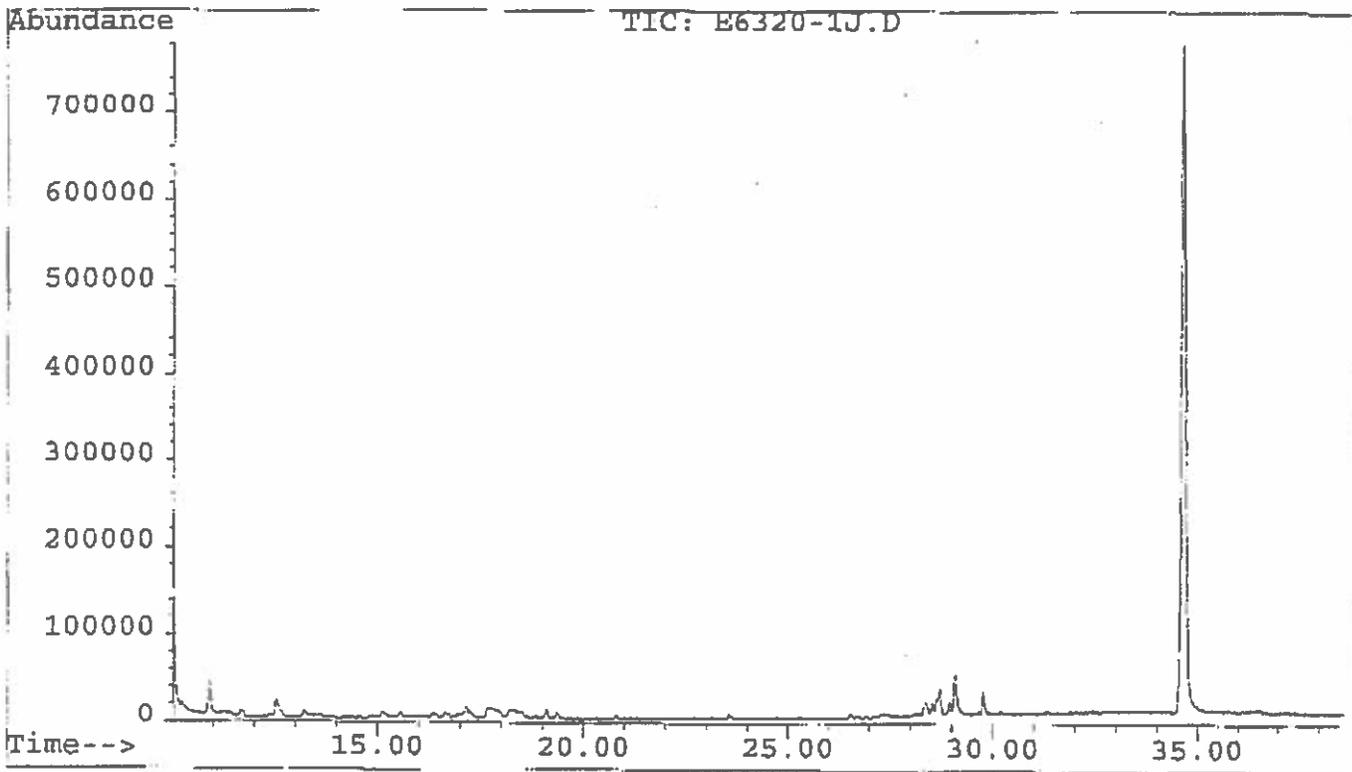
Method of Analysis: 418.1

Project: COGCC Smits Federal #6-20A

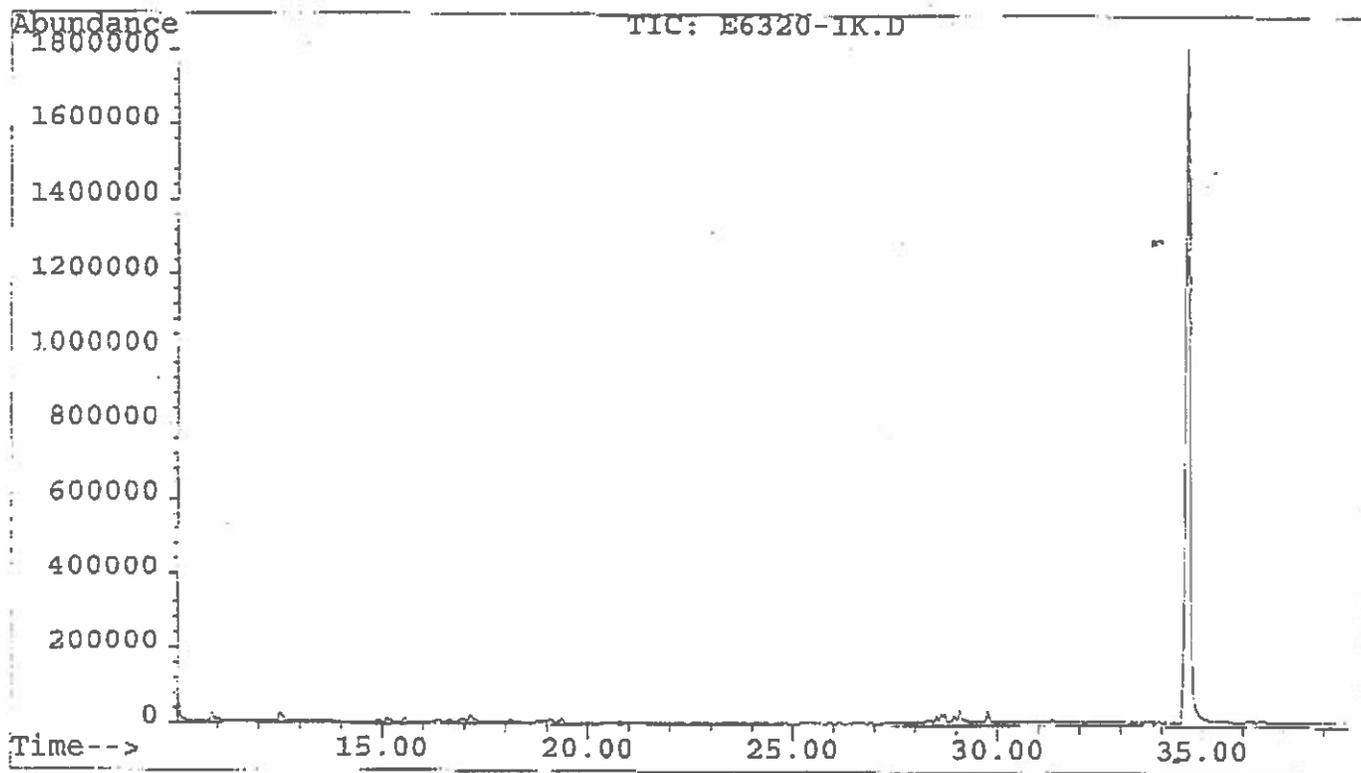
Sample ID	TRPH (mg/kg)
PB1-4	114
PB1-9	37.6
PB2-4	10.7
PB2-13	47.2
PB3-2-4	212
PB34-2-4	1050
PB4-18	537
PB5-12	550
PB6-4	276

  
Project Manager12/7/06  
Date

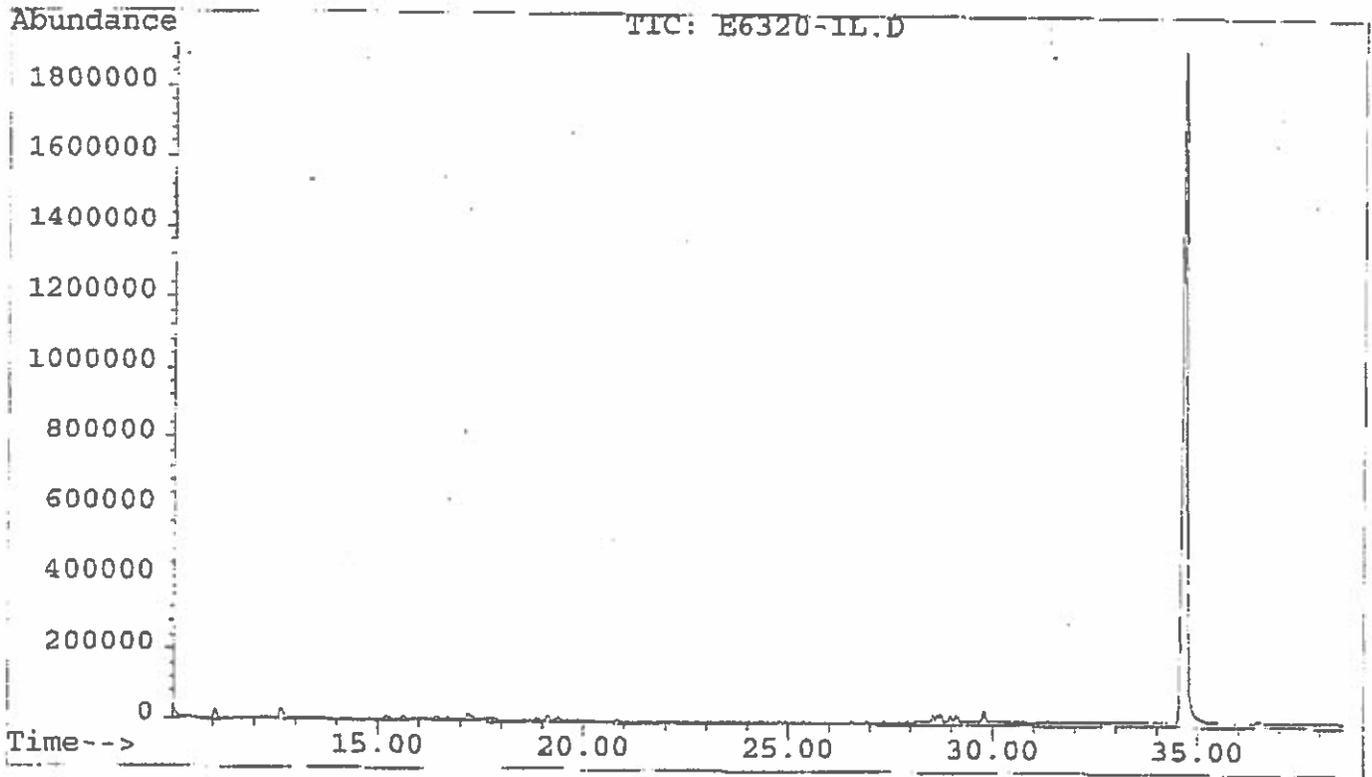
File : C:\HPCHEM\1\DATA\E6320-1J.D  
Operator :  
Acquired : 28 Nov 106 8:07 am using AcqMethod BTEXGAS  
Instrument : 5970 - In  
Sample Name:  
Misc Info :  
Vial Number: 1



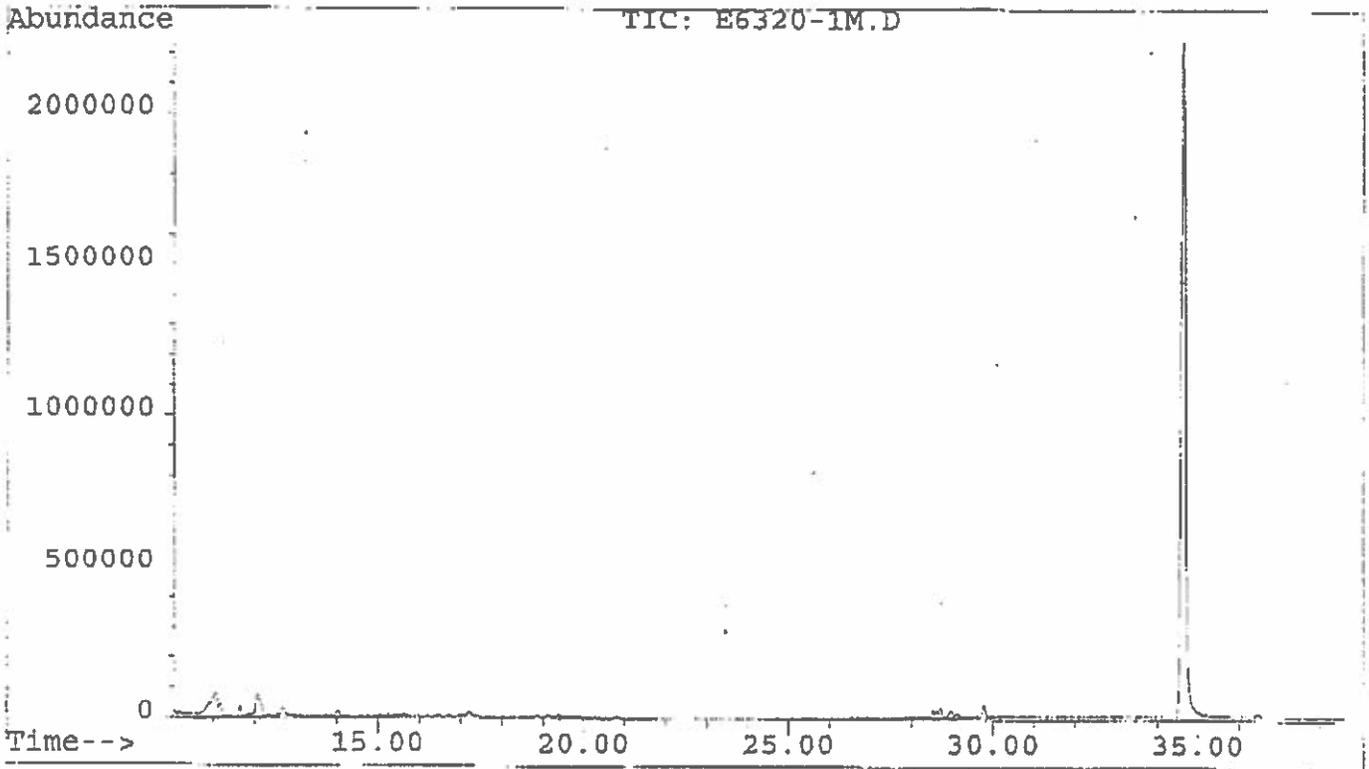
File : C:\HPCHEM\1\DATA\E6320-1K.D  
Operator :  
Acquired : 28 Nov 106 9:45 am using AcqMethod BTEXGAS  
Instrument : 5970 - In  
Sample Name:  
Misc Info :  
Vial Number: 1



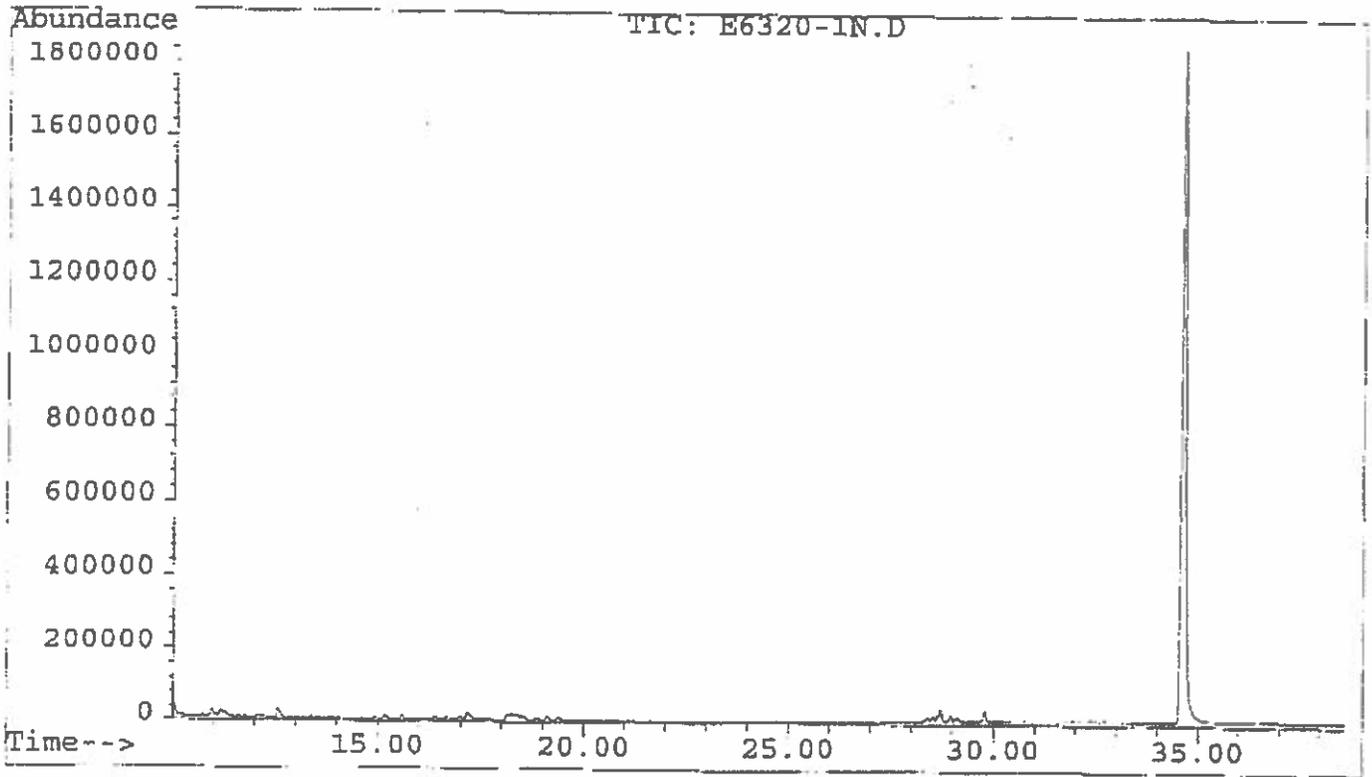
File : C:\HPCHEM\1\DATA\E6320-1L.D  
Operator :  
Acquired : 28 Nov 106 10:58 am using AcqMethod BTEXGAS  
Instrument : 5970 - In  
Sample Name :  
Misc Info :  
Vial Number: 1



File : C:\HPCHEM\1\DATA\E6320-1M.D  
Operator :  
Acquired : 28 Nov 106 11:44 am using AcqMethod BTEXGAS  
Instrument : 5970 - In  
Sample Name:  
Misc Info :  
Vial Number: 1



File : C:\HPCHEM\1\DATA\E6320-1N.D  
Operator :  
Acquired : 28 Nov 106 1:37 pm using AcqMethod BTEXGAS  
Instrument : 5970 - In  
Sample Name:  
Misc Info :  
Vial Number: 1



CO FCC  
Smith's Federal  
#6-20A

# Chain of Custody Record

Weld Laboratories, Inc.  
1527 1st Ave. Established 1978  
Greeley, CO 80631  
Phone: (970)353-8118 Fax: (970)353-1671

Company Name MATTONEI Environmental  
Address 1601 10th Av

Contact John Mattone Phone No. 970-332-2644 Fax No. 970-219-5357

Project No.: <u>2006-017</u>	Sampler: Print Name <u>John Mattone</u>	Signature <i>[Signature]</i>	Date	Time	Sample Type				No. of Containers	Remarks
					Water	Liquid	Oil	Solid		
PB1-4	4' BGL, Prebel		11/16/06					1		
PB1-9	9' BGL		11/16/06					1		
PB2-4	4' BGL PB2		11/16/06					1		
PB2-13	13' BGL		11/16/06					1		
PB3-2-4	2-4' BGL PB3		11/16/06					1		
PB4-2-4	2-4' BGL		11/16/06					1		
PB4-18	18' BGL		11/16/06					1		
PB5-12	12' BGL		11/16/06					1		
PB6-4	4' BGL		11/16/06					1		

Comments:

Relinquished by: (Signature) <i>[Signature]</i>	Date 11/16/06	Time 2:30 PM	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: By: (Signature) <i>[Signature]</i>	Date 11/16/06	Time 2:20 PM
Method of shipment:					

CSGCC  
Smiths Fed AC  
#6-20A

**Chain of Custody Record**

Company Name: MATHEW ENVIRONMENTAL

Address: 1601 10th Av

Weld Laboratories, Inc.  
1527 1st Ave. Established 1978  
Greeley, CO 80631  
Phone: (970)353-8118 Fax: (970)353-1671

Contact: John Mathey Phone No. 970-352-2644 Fax No. 888-219-5357

Sample ID	Sample Location	Signature			Analysis						
		Composite	Grab	Date	Time	Water	Liquid	Oil	Solid	No. of Containers	Remarks
PB1				11/16/06						1	
PB2				11/16/06						1	
PB3				11/16/06						1	
PB4				11/16/06						1	
PB5				11/16/06						1	

Comments: Standard Turn Array

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
<u>John Mathey</u>	11/16/06	2:30 PM			

Method of shipment:

**PROBE/BOREHOLE #: PB1**

**BORING LITHOLOGIC LOG SUMMARY**

**SITE:** Smits Federal #6 – 20A  
SENW20- T2N R66W, Weld County, Co.

**Date:** November 16, 2006

**MAP COORDINATES GPS:**

**Latitude:** 40.07.543 40.12571  
**Longitude:** 104.48.189 104.80313

**BORING LOCATION:** At estimated location near test pit 275 NW from wellhead.

**DRILLER:** Drill Pro **DRILLING METHODOLOGY:** direct push

**GEOLOGIST:** John Mahoney, MEC Inc.

**TOTAL DEPTH:** 20 feet **WATER DEPTH:** Approx 16-18 feet BGL **CONVERTED TO Temporary Monitoring Well**

**Field Monitoring Equipment:** Photo Ionization Detector (PID)

**LITHOLOGIC DESCRIPTION**

<b>DEPTH</b>	<b>LITHOLOGY</b>	<b>PID/OVM</b>	<b>Sample</b>
0-4'	light to medium brown, medium grain sand, reworked, no odor , no stain	@4': ND	yes
4-8'	light to medium brown, medium grain sand, no odor , no stain	@8': ND	
8-12'	light to medium brown, medium grain sand, some brick chunks 6" dark layer at 9', remainder no odor , no stain 10-12' light brown coarse sand, some gravel Oxid streaks at 10-11 feet	@9': ND @10-11: ND	
12-16'	coarse grain sand, damp at 15' Wet at 16'	@12': ND @14-15': ND @16: ND	
16-20'	fine to medium sand, slightly darker at 17' wet		

**PROBE/BOREHOLE #: PB2**

**BORING LITHOLOGIC LOG SUMMARY**

SITE: Smits Federal #6 – 20A  
SENW20- T2N R66W, Weld County, Co.

Date: November 16, 2006

MAP COORDINATES GPS:

Latitude: 40.07548 40.12581  
Longitude: 104.48.1851 104.80314

BORING LOCATION: At estimated location near test pit 30' N of PB1.

DRILLER: Drill Pro DRILLING METHODOLOGY: direct push

GEOLOGIST: John Mahoney, MEC Inc.

TOTAL DEPTH: 20 feet WATER DEPTH: Approx 16-18 feet BGL CONVERTED TO Temporary Monitoring Well

Field Monitoring Equipment: Photo Ionization Detector (PID)

**LITHOLOGIC DESCRIPTION**

DEPTH	LITHOLOGY	PID/OVM	Sample
0-4'	light to medium brown, fine-medium grain sand, reworked, no odor , no stain	@3-4': ND	yes
4-8'	light to medium brown, medium grain sand,, darker sand 4-5' 5-7 fine clayey sand and coarse sand 7-8 medium sand no odor , no stain	@7-8': ND	
8-12'	light to medium brown, medium to coarse grain sand, no odor , no stain Oxid streaks at 10-11 feet, damp at 12'	@12: ND	
12-16'	medium to coarse grain sand, damp at 15' Wet at 16' Slight darker at 13-13.5'	@13': .4 @16: ND	
16-20'	fine to medium sand,, wet		

**PROBE/BOREHOLE #: PB3**

**BORING LITHOLOGIC LOG SUMMARY**

**SITE:** Smits Federal #6 – 20A  
SENW20- T2N R66W, Weld County, Co.

**Date:** November 16, 2006

**MAP COORDINATES GPS:**

**Lattitude:** 40.07.536 40.12558  
**Longitude:** 104.48.186 104.80311

**BORING LOCATION:** At estimated location 30; S of PB1

**DRILLER:** Drill Pro **DRILLING METHODOLOGY:** direct push

**GEOLOGIST:** John Mahoney, MEC Inc.

**TOTAL DEPTH:** 4 feet **WATER DEPTH:**

**Field Monitoring Equipment:** Photo Ionization Detector (PID)

***LITHOLOGIC DESCRIPTION***

<b>DEPTH</b>	<b>LITHOLOGY</b>	<b>PID/OVM</b>	<b>Sample</b>
0-4'	light to medium brown, medium to coarse grain sand, reworked, no odor , no stain, slight refusal, stopped probe relocated	@4': ND	yes

**PROBE/BOREHOLE #: PB4**

**BORING LITHOLOGIC LOG SUMMARY**

SITE: Smits Federal #6 – 20A  
SENW20- T2N R66W, Weld County, Co.

Date: November 16, 2006

MAP COORDINATES GPS:

Latitude: 40.07.533 40.12556  
Longitude: 104.48.189 104.80316

BORING LOCATION: Approximately 45' south of PB1

DRILLER: Drill Pro DRILLING METHODOLOGY: direct push

GEOLOGIST: John Mahoney, MEC Inc.

TOTAL DEPTH: 22 feet WATER DEPTH: Approx 16-18 feet BGL CONVERTED TO Temporary Monitoring Well

Field Monitoring Equipment: Photo Ionization Detector (PID)

**LITHOLOGIC DESCRIPTION**

DEPTH	LITHOLOGY	PID/OVM	Sample
0-4'	2' recovered, light to medium brown, medium grain sand, reworked, no odor , no stain	@4': ND	yes
4-8'	3' recovered, light to medium brown, medium to coarse grain sand, no odor , no stain	@8': ND	
8-12'	light to medium brown, medium to coarse grain sand, no odor , no stain	@12': ND	
12-16'	coarse grain sand, damp at 15', Wet at 16'	@15-16': ND	
16-20'	fine to medium sand, darker stain streak at 17-18' wet	@17-18: 1.1	
20-22'	fine, silty sand, refusal at 22' Wet, unconfirmed top of bedrock	@20: .4	

**PROBE/BOREHOLE #: PB5**

**BORING LITHOLOGIC LOG SUMMARY**

**SITE:** Smits Federal #6 – 20A  
SENW20- T2N R66W, Weld County, Co.

**Date:** November 16, 2006

**MAP COORDINATES GPS:**

**Latitude:** 40.07.534 40.12557  
**Longitude:** 104.48.207 104.80345

**BORING LOCATION:** Approximately 30' east of PB4

**DRILLER:** Drill Pro **DRILLING METHODOLOGY:** direct push

**GEOLOGIST:** John Mahoney, MEC Inc.

**TOTAL DEPTH:** 20 feet **WATER DEPTH:** Approx 16-18 feet BGL **CONVERTED TO Temporary Monitoring Well**

**Field Monitoring Equipment:** Photo Ionization Detector (PID)

***LITHOLOGIC DESCRIPTION***

<b>DEPTH</b>	<b>LITHOLOGY</b>	<b>PID/OVM</b>	<b>Sample</b>
0-4'	light to medium brown, medium grain sand, reworked, no odor , no stain	@4': 2.3	yes
4-8'	light to medium brown, medium to coarse grain sand, Oxid layer at 7-8', no odor , no stain	@8': ND	
8-12'	light to medium brown, medium to coarse grain sand, no odor , no stain	@12': - 5.6	
12-15'	coarse grain sand, damp at 15', Wet at 16' Slight refusal stiff at 15'	@13': ND	
15-19'	fine to medium sand, wet wet	@17: ND	
18-20'	fine, silty sand, lot of slough, refusal at 20' Wet,	@18: . ND	

**PROBE/BOREHOLE #: PB6**

**BORING LITHOLOGIC LOG SUMMARY**

SITE: Smits Federal #6 – 20A  
SENW20- T2N R66W, Weld County, Co.

Date: November 16, 2006

MAP COORDINATES GPS:

Latitude: 40.07.537 40.12560  
Longitude: 104.48.184 104.80305

BORING LOCATION: Approximately 30' west of PB4

DRILLER: Drill Pro DRILLING METHODOLOGY: direct push

GEOLOGIST: John Mahoney, MEC Inc.

TOTAL DEPTH: 20 feet WATER DEPTH: Approx 16-18 feet BGL CONVERTED TO Temporary Monitoring Well  
Field Monitoring Equipment: Photo Ionization Detector (PID)

**LITHOLOGIC DESCRIPTION**

DEPTH	LITHOLOGY	PID/OVM	Sample
0-4'	light to medium brown, medium grain sand, reworked, no odor , no stain	@4': ND	
4-8'	light to medium brown, medium to coarse grain sand, no odor , no stain	@8': ND	
8-12'	light to medium brown, medium to coarse grain sand, Oxid layer at 10-11', no odor , no stain	@12': - ND	
12-15'	coarse grain sand, damp at 15', Wet at 16' Slight refusal stiff at 15'	@13': ND	
15-19'	fine to medium sand, wet wet	@17': ND	