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AUGUST 2010

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BP AMERICA PRODUCTION CO.

GROUNDWATER REMEDIATION REPORT

GCU # 204E (I) SECTION 34, T28N, R12W, NMPM SAN JUAN COUNTY, NEW MEXICO

PREPARED FOR: NEW MEXICO OIL CONSERVATION DIVISION 1220 ST. FRANCIS DRIVE SANTA FE, NEW MEXICO 87504

DECEMBER 2010

PREPARED BY: BLAGG ENGINEERING, INC.

Consulting Petroleum / Reclamation Services P.O. Box 87 Bloomfield, New Mexico 87413

BP AMERICA PRODUCTION COMPANY GCU # 204E - Blow Pit NE¹/₄ SE¹/₄, Sec. 34, T28N, R12W

Remediation via Excavation Date:	July 2009
Monitor Well Installation Dates:	11/1/06 (MW #2), 1/18/07 (MW #1, MW #3), 10/1/09 (MW #2R, MW #4, MW #5)
Monitor Well Sampling Dates:	5/19/09, 11/16/09, 2/19/10, 5/19/10, 10/30/10

Pit Closure & Background:

A site earthen blow pit closure was initiated in June 2003. Groundwater impacts were identified from sampling and testing of MW #2 in November 2006. After receipt of the laboratory results, the New Mexico Oil Conservation Division (**NMOCD**) was notified with a letter dated March 2, 2007 of the groundwater impacts. Documentation of this work and subsequent groundwater monitoring data for the site was previously submitted to NMOCD for review. Further site delineation and limited excavation of the source area was proposed. In addition, continued bi-annual sampling pursuant to BP's NMOCD approved Groundwater Management Plan (**GMP**) was also suggested within the report. Reporting herein is for further site soil remediation, groundwater monitor well installations, and site monitoring conducted in 2009 and 2010.

Soil Remediation and Groundwater Abatement:

In July 2009, excavation of the source area was conducted using a trackhoe (Figure 1B). Groundwater was not detected during the removal of the apparent impacted soils. Depths of the excavation averaged fifteen (15) feet below ground surface with sandstone bedrock being observed at the base. The excavation perimeter was calculated approximately 2,600 square feet. An estimated 500 cubic yards of soil were removed and transported to BP's Crouch Mesa Facility.

Groundwater monitor wells MW #2R, MW #4, and MW #5 were installed on October 1, 2009 and sampling initiated in November 2009 (Figure 1C). Boring log of the three (3) newly installed wells along with completion information are contained within this report.

Groundwater Monitor Well Sampling Procedures:

Each groundwater monitor well was purged approximately three (3) well bore volumes or at a minimum, its well bore using new disposable bailers, then given a sufficient amount of time to allow recovery prior to sample collections. The groundwater samples were collected following US EPA: SW-846 protocol, were placed into laboratory supplied containers with appropriate preservative, and stored in an ice chest for express delivery to an analytical laboratory for testing under strict chain-of-custody procedures. Analytical testing for benzene, toluene, ethylbenzene, and total xylenes (BTEX) by US EPA Method 8021B was conducted.

Fluids generated during monitor well development and purging were managed by discarding into the separator/compressor below-grade tank (BGT) located south-southwest of the test wells. The BGT contents are eventually disposed through approved NMOCD operational procedures for removal of produced fluids.

Water Quality and Gradient Information:

The analytical results for MW #2R have shown a significant decrease in all BTEX constituents since the remediation effort in July 2009. MW #3 results appear to be in a steady state condition, especially the benzene and total xylenes constituents. Both MW #4 and MW #5 have elevated benzene and total xylenes concentrations well above the NMWQCC standards. A historical summary of laboratory analytical BTEX results are included within the tables on the following pages. Field data sheets, laboratory reports, and laboratory quality assurance/quality control information are also included.

Groundwater contour maps (Figure 2 through Figure 6) reveal the relative elevations from the site wells have shown an apparent north-northwest flow direction.

Summary and/or Recommendations:

The well site is located in a very remote area of San Juan County near Navajo Agricultural Product Industry (NAPI) area. The presence of BTEX well above NMWQCC standards down gradient of the source area (MW #2R) and lateral gradient (MW #3) indicates possible long term monitoring. Down gradient delineation to the north of the source area is necessary with at least one (1) or more groundwater test wells. Alternative remedial actions such as introducing an oxygenated compound may be suitable for groundwater abatement of high dissolved BTEX concentrations. Quarterly sampling of MW #2R is recommended. At a minimum, bi-annual sampling of MW #3, MW #4, and MW #5 should be considered unless changes in their analytical data suggest otherwise. This site will continue to have sampling and testing pursuant to BP's GMP.

BP AMERICA PROD. CO. GROUNDWATER LAB RESULTS SUBMITTED BY BLAGG ENGINEERING, INC.

GCU # 204E

UNIT I, SEC. 34, T28N, R12W

REVISED DATE: November 11, 2010

FILENAME: (204E4Q10.WK4) NJV

<u></u>	-1			. <u> </u>				BTEX EPA METHOD 8021B (ppb)					
SAMPLE	WELL	D.T.W.	T.D.	TDS	COND.	pН	PRODUCT	Benzene	Toluene	Ethyl	Total		
DATE	NAME or No.	(ft)	(ft)	(mg/L)	umhos		(ft)			Benzene	Xylene		
30-Jan-07	MW #1	18.57	27.00	584	1,100	7.33		ND	3.0	2.3	13		
14-Nov-06	MW #2	16.69	27.50	924	1,400	6.80		1,000	3,900	1,100	9,700		
30-Jan-07		16.97			1,200	6.89		900	1,600	1,400	12,000		
25-Apr-07		16.37			1,000	6.78		790	1,200	1,100	13,000		
23-Jul-07		15.16			1,000	6.82		940	630	1,800	12,000		
26-Jun-08		14.36			700	7.34		200	410	1,700	12,000		
26-Aug-08		13.36			800	7.27		160	210	1,400	11,000		
19-May-09		14.60			800	7.32		140	83	1,200	6,700		
U	dup.)	. "			11	"		150	68	1,300	7,200		
16-Nov-09	MW #2R	15.61			900	7.71		13	ND	240	1,900		
19-Feb-10		16.05			1,000	7.86		ND	ND	150	1,300		
19-May-10		15.88			1,100	7.75		11	1.8	220	1,800		
30-Oct-10		15.55			1,000	7.82		6.3	ND	86	410		
30-Jan-07	MW #3	13.92	25.00	620	1,000	7.00		8.2	ND	71	120		
25-Apr-07		11.81			900	6.91		8.3	ND	25	140		
23-Jul-07		11.89			1,000	6.74	,	26	ND	90	270		
25-Oct-07		10.37			1,100	7.00		2.4	ND	4.7	11		
14-Apr-08		11.43			700	6.99		1,360	14	116	381		
26-Aug-08		9.96			1,200	6.99		520	ND	64	140		
19-May-09		12.00		、 	800	7.01		350	170	380	700		
16-Nov-09	•	13.21			800	7.18		240	1,700	600	1,500		
19-Feb-10		13.44			800	7.36		96	940	480	1,100		
19-May-10		13.45			1,000	7.19		210	2,200	680	2,500		
30-Oct-10	<u> </u>	12.69	Ĺ		1,000	6.95		350	210	340	1,100		
								10	750	750	620		

BP AMERICA PROD. CO. GROUNDWATER LAB RESULTS SUBMITTED BY BLAGG ENGINEERING, INC.

GCU # 204E UNIT I, SEC. 34, T28N, R12W

REVISED DATE: November 11, 2010

FILENAME: (204E4Q10.WK4) NJV

								BTEX	BTEX EPA METHOD 8021B						
SAMPLE	WELL	D.T.W.	T.D.	TDS	COND.	рН	PRODUCT	Benzene	Toluene	Ethyl	Total				
DATE	NAME or No.	<u>(ft)</u>	(<u>ft</u>)	(mg/L)	umhos		(ft)			Benzene	Xylene				
16-Nov-09	MW #4	15.66		2,010	1,600	7.10		2,200	14	140	950				
19-Feb-10		15.82			2,000	7.02		5,800	14	[.] 500	1,800				
19-May-10		15.78			2,700	6.85		5,200	42	470	1,500				
30-Oct-10		15.47			1,900	6.73		6,500	63 ·	. 600	1,500				
16-Nov-09	MW #5	13.77		1,090	1,300	7.01		1,100	200	430	2,800				
19-Feb-10		13.84			1,900	6.99		790	100	· 370	2,600				
19-May-10		13.94			2,600	6.82		1,200	180	370	2,600				
30-Oct-10		13.32	`		1,300	6.88		380	140	450	2,200				
		NMWO	OCC GE	10	750	750	620								

NOTES: 1) RESULTS IN BOLD RED TYPE INDICATE EXCEEDING NMWQCC STANDARDS.

2) RESULTS IN BOLD BLUE TYPE INDICATE BELOW NMWQCC STANDARDS AFTER PREVIOUS RESULTS IN BOLD RED TYPE EXCEEDED

3) ND INDICATES NOT DETECTED AT THE REPORTING LIMITS (less than regulatory standards of at least a magnitude of 10).

4) NMWQCC INDICATES NEW MEXICO WATER QUALITY CONTROL COMMISSION.





Hall Environmental Analysis Laboratory, In
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Date: 21-Jul-09

CLIENT:	Blagg Engineering			Client	Sample ID:	1@12.5	· · · · · · · · · · · · · · · · · · ·		
Lab Order:	0907162		•	Colle	ection Date:	7/8/2009 11:17:00 AM			
Project:	GCU #204E- Blow Pit			Dat	7/9/2009				
Lab ID:	0907162-01				Matrix:	SOIL			
Analyses	······································	Result	PQL	Qual U	Jnits	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE O	RGANICS		``			Analyst: SCC		
Diesel Range O	rganics (DRO)	ND	10	, n	ng/Kg	1	7/16/2009		
Surr: DNOP		90.2	61.7-135	%	REC	1	7/16/2009		
EPA METHOD	8015B: GASOLINE RANGI	Ξ.			· · ·		Analyst: DAM		
Gasoline Range	Organics (GRO)	NĎ	5.0	m	ıg/Kg	1	7/15/2009 2:01:48 PM		
Surr: BFB		88.5	. 58.8-123	%	REC	1	7/15/2009 2:01:48 PM		
EPA METHOD	8021B: VOLATILES						Analyst: DAM		
Benzene	,	ND	0.050	m	g/Kg	1	7/15/2009 2:01:48 PM		
Toluene	· · · · · · · · · · · · · · · · · · ·	ND	0.050	m	g/Kg	· 1	7/15/2009 2:01:48 PM		
Ethylbenzene		ND	0.050	m	ig/Kg	1 .	7/15/2009 2:01:48 PM		
Xylenes, Total		ND	0.10	m	ig/Kg	1	7/15/2009 2:01:48 PM		
Surr: 4-Bromo	Surr: 4-Bromofluorobenzene		66.8-139	%	REC	1	7/15/2009 2:01:48 PM		

Qualifiers:

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Value exceeds Maximum Contaminant Level
 Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level

RL Reporting Limit

Page 1 of 4

Date: 21-Jul-09

CLIENT:	Blagg Engineering		•	Clie	nt Sampl	e ID:	2 @ 13.5'			
Lab Order:	0907162			Co	llection I	Date:	7/8/2009	10:30:00 AM		
Project:	GCU #204E- Blow Pit			D	ate Rece	ived:	7/9/2009	•		
Lab ID:	0907162-02				Ma	trix:	SOIL	Date Analyzed Analyst: SCC 7/16/2009 7/16/2009 Analyst: DAM 7/15/2009 2:32:15 PM		
Analyses	· ·	Result	PQL	Qual	Units		DF	Date Analyzed		
EPA METHOD 8	015B: DIESEL RANGE O	RGANICS						Analyst: SCC		
Diesel Range OI	rganics (DRO)	. 41	10		mg/Kg		1	7/16/2009		
Surr: DNOP		90.6	61.7-135	·	%REC		1	7/16/2009		
EPA METHOD 8	1015B: GASOLINE RANGE	·						Analyst: DAM		
Gasoline Range	Organics (GRO)	79	25		mg/Kg		5	7/15/2009 2:32:15 PM		
Surr: BFB		193	58.8-123	S	%REC		5	7/15/2009 2:32:15 PM		
EPA METHOD 8	021B: VOLATILES							Analyst: DAM		
Benzene		- ND	0.25		mg/Kg		5	7/15/2009 2:32:15 PM		
Toluene		0.56	0.25		mg/Kg		5	7/15/2009 2:32:15 PM		
Ethylbenzene		ND	0.25		mg/Kg		5	7/15/2009 2:32:15 PM		
Xylenes, Total		1.8	0.50		mg/Kg		5	7/15/2009 2:32:15 PM		
Surr: 4-Bromo	fluorobenzene	96.4	66.8-139		%REC		5	7/15/2009 2:32:15 PM		

Qualifiers:

0

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 2 of 4

Hall Envir	onmental Analysis	s Labor	atory, I	nc.	Da	ate: 21-Ju	1-09	
CLIENT:	Blagg Engineering	n _		Clier	nt Sample ID:	3@14'	· · · · · · · · · · · · · · · · · · ·	
Lab Order:	0907162			Co	llection Date:	7/8/2009	10:12:00 AM	
Project:	GCU #204E- Blow Pit			D	ate Received:	7/9/2009	· · · ·	
Lab ID:	0907162-03				Matrix:	SOIL		
Analyses	· ·	Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD	8015B: DIESEL RANGE O	RGANICS					Analyst: SCC	
Diesel Range O	rganics (DRO)	ND	10		mg/Kg	1	7/16/2009	
Surr: DNOP		· 91.9	61.7-135		%REC	1	7/16/2009	
EPA METHOD	8015B: GASOLINE RANGE	E					Analyst: DAM	
Gasoline Range	Organics (GRO)	ND	5.0		mg/Kg	1	7/15/2009 3:02:38 PM	
Surr: BFB		110	58.8-123		%REC	1	7/15/2009 3:02:38 PM	
EPA METHOD	BO21B: VOLATILES						Analyst: DAM	
Benzene		ND	0.050		mg/Kg	1	7/15/2009 3:02:38 PM	
Toluene		ND	0.050		mg/Kg	1	7/15/2009 3:02:38 PM	
Ethylbenzene		ND	0.050		mg/Kg	1	7/15/2009 3:02:38 PM	
Xylenes, Total		ND	0.10		mg/Kg	1	7/15/2009 3:02:38 PM	
Surr: 4-Bromo	ofluorobenzene	98.9	66.8-139		%REC	1	7/15/2009 3:02:38 PM	

Qualifiers:

(

- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 3 of 4

Date: 21-Jul-09

CLIENT: Blagg Engineering Lab Order: 0907162 **Project:** GCU #204E- Blow Pit Lab ID: 0907162-04

Collection Date: 7/8/2009 10:53:00 AM Date Received: 7/9/2009

Matrix: SOIL

Client Sample ID: 4@15'

Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANG	E ORGANICS				Analyst: SCC
Diesel Range Organics (DRO)	ND	10	mg/Kg	. 1	7/16/2009
Surr: DNOP	92.1	61.7-135	%REC	1	7/16/2009
EPA METHOD 8015B: GASOLINE RA	NGE				Analyst: DAM
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	7/15/2009 3:33:05 PM
Surr: BFB	93.5	58.8-123	%REC	1	7/15/2009 3:33:05 PM
EPA METHOD 8021B: VOLATILES					Analyst: DAM
Benzene	ND	0.050	· mg/Kg	1	7/15/2009 3:33:05 PM
Toluene	ND	0.050	mg/Kg	1	7/15/2009 3:33:05 PM
Ethylbenzene	ND	0.050	mg/Kg	1	7/15/2009 3:33:05 PM
Xylenes, Total	ND	0.10	mg/Kg	1	7/15/2009 3:33:05 PM
Surr: 4-Bromofluorobenzene	89.1	66.8-139	%REC	1	7/15/2009 3:33:05 PM

Qualifiers:

Value exceeds Maximum Contaminant Level ۰ Estimated value E

- Analyte detected below quantitation limits J
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits S
- Analyte detected in the associated Method Blank В
- Holding times for preparation or analysis exceeded Н
- MCL Maximum Contaminant Level
- RL **Reporting Limit**

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QA/QC SUMMARY REPORT

lient: Blagg Engi	ineering								
roject: GCU #204	E- Blow Pit	· .		. •			W	ork Or	rder: 0907162
nalyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLi	mit Qual
ethod: EPA Method 8015B:	Diesel Range	Organics		· · · ·					· · · · · · · · · · · · · · · · · · ·
mple ID: 0907162-01AMSD		MSD			Batch I	D: 19611	Analysis Dai	te:	7/16/2009
esel Range Organics (DRO) Sample ID: MB-19611	55.90	[™] mg/Kg <i>MBLK</i>	10	1 12 .	67.4 Batch I	117 D: 19611	13.4 Analysis Dal	·17.4 e:	7/15/2009
nesel Range Organics (DRO)	· ND	mg/Kg	10		Detek J	D: 40644	Analusia Dal		7/15/0000
mpte ID: LCS-19611		103				D. 19011	Analysis Dai	σ.	//15/2008
esel Range Organics (DRO)	43.07	mg/Kg LCSD	10	86.1	64.6 Batch I	116 D: 19611	Analysis Dat	e:	7/16/2009
Jiesel Range Organics (DRO)	44 12	ma/Ka	10	88.2	64.6	116	2.41	17.4	
mple ID: 0907162-01AMS		MS	10	00.2	Batch I	D: 19611	Analysis Dat	e:	7/16/2009
esel Range Organics (DRO)	48.87	mg/Kg	10	97.7	67.4	117			
ethod: EPA Method 8015B:	Gasoline Ran	ge				···· · · · · · · · · · · · · · · · · ·	· ·		
emple ID: MB-19584		MBLK			Batch I	D: 19584	Analysis Dat	e: 7	/14/2009 8:43:33 PM
asoline Range Organics (GRO)	ND	mg/Kg	5.0						
ample ID: LCS-19584	•	LCS			Batch II	D: 19584	Analysis Dat	e: 7	/14/2009 6:41:42 PM
asoline Range Organics (GRO)	28.93	mg/Kg	5.0	108	64.4	133			•
ample ID: LCSD-19584		LCSD			Batch II	D: 19584	Analysis Dat	e: 7.	/14/2009 7:12:12 PM
asoline Range Organics (GRO)	30.24	mg/Kg	5.0	113	69.5	120	4.43	11.6	
ethod: EPA Method 8021B:	Volatiles	•						,	
ample ID: MB-19684		MBLK			Batch II	D: 19584	Analysis Dat	e: 7/	/14/2009 8:43:33 PM
enzene	ND	mg/Kg	0.050						
luene	ND	mg/Kg	0.050	-					
thylbenzene	ND	mg/Kg	0.050		•				_
ylenes, Total	ND	mg/Kg	0.10						
ample ID: LCS-19584	,	LCS			Batch II	D: 19584	Analysis Date	e: 7/	/14/2009 7:42:38 PM
enzene	0.8925	mg/Kg	0.050	88.1	78.8	132		,	
oluene	0.8836	mg/Kg	0.050	88.4	78.9	112			
łhylbenzene	0.9013	mg/Kg	0.050	90.1	69.3	125			
vienes, Total	2.675	mg/Kg	0.10	89.2	73	128		-	
ample ID: LCSD-19584		LCSD	,		Batch I	D: 19584	Analysis Date	B: .7/	14/2009 8:13:03 PM
enzene	0.9255	mg/Kg	0.050	91.4	78.8	132	3.63	27	
bluene	0.9262	mg/Kg	0.050	92.6	78.9	112	4.71 .	19	
thylbenzene	0.9596	mg/Kg	0.050	96.0	69.3	125	6.27	10	
ylenes, Total	2.849	mg/Kg	0.10	95.0	73	128	6.29	13	

Qualifiers:

E

R

Estimated value

Analyte detected below quantitation limits

RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Date: 21-Jul-09

Page 1

	Sample Receipt C	hecklist		
lient Name BLAGG	· .	Date Receiv	ved:	7/9/2009
Vork Order Number 0907162		Received	by: TLS	K
10		Sample ID	labels checked by: -	
Signature	Date		_	
Natrix: Car	rier name: <u>UPS</u>	•		
hipping container/cooler in good condition?	Yes 🔽	No 🗌	Not Present	•
ustody seals intact on shipping container/cooler?	Yes 🗹	No 🗔	Not Present	Not Shipped
Sustody seals intact on sample bottles?	Yes 🗀	No 🗍	N/A 🗹	••
chain of custody present?	Yes 🗹	No 🗔		
hain of custody signed when relinquished and received?	Yes 🗹	No 🗌		
) Chain of custody agrees with sample labels?	Yes 🗹	No 🗔		
Samples in proper container/bottle?	Yes 🗹	No 🗔		
ample containers intact?	Yes 🖌	No 🗌		
Sufficient sample volume for indicated test?	Yes 🗹	No 🗔		
Il samples received within holding time?	Yes 🗹	No 🗔		Number of preserve
Vater - VOA viais have zero headspace? No VOA	vials submitted 🗹	Yes 🗌	No 🗔	bottles checked for pH:
Vater - Preservation labels on bottle and cap match?	Yes	No 🗔	N/A	
Vater - pH acceptable upon receipt?	Yes 🗌	No 🗔	N/A 🗹	<2 >12 unless noted
container/Temp Blank temperature?	4.6°	<6° C Accepta	nble	Delow.
COMMENTS:		If given sufficie	nt time to cool.	
	· .			
	·			
		, ,		
lient contacted Date conta	acted:	Pe	rson contacted	
ontacted by: Regarding	:			·
omments:	· ·			
· · · · · · · · · · · · · · · · · · ·		<u></u> <u></u>		
	· -			
Corrective Action	<u> </u>		<u></u>	·······
	<u> </u>		· · · · · · · · · · · · · · · · · · ·	
- · · ·		<u></u>		· · ·



















BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT: BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

LABORATORY (S) USED : HALL ENVIRONMENTAL

NJV

GCU #204E - BLOW PIT

UNIT I, SEC. 34, T28N, R12W

Date : May 19, 2009

Filename : 05-19-09.WK4

SAMPLER :_____

NJV

WELL	WELL	WATER	DEPTH TO	TOTAL	SAMPLING	pН	CONDUCT	TEMP.	VOLUME
#	ELEV.	ELEV.	WATER	DEPTH	TIME	×	(umhos)	(celcius)	PURGED
	(ft)	(ft)	(ft)	(ft)		•			(gal.)
MW - 1	103.89	87.06	16.83	27.00	-	-	-	-	-
MW - 2	100.00	85.40	14.60	27.50	1430	7.32	800	19.9	6.25
MW - 3	95.66	83.66	12.00	25.00	1350	7.01	800	18.8	6.50
			INSTRUM	4.01/7.00/10.00	2,800				
				DAT	E & TIME =	05/16/09	0810		

NOTES: <u>Volume of water purged from well prior to sampling; $V = pi X r^2 X h X 7.48 gal./ft3) X 3 (wellbores)</u>.$ (i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)</u>

Ideally a minimum of three (3) wellbore volumes:

2.00 " well diameter = 0.49 gallons per foot of water.

Comments or note well diameter if not standard 2".

Excellent recovery in MW #2 & #3. Collected samples for BTEX per US EPA Method 8021B from MW #2 & #3. Collected duplicate from MW #2 - labeled as MW #1X and recorded on separate COCR as GCU #1X.

Top of casing MW #1 ~ 2.40 ft., MW #2 ~ 2.30 ft., MW #3 ~ 2.30 ft. above grade.

on-site	1:22	temp	87 F
off-site	2:41	temp	88 F
sky cond.	Partly	cloudy	
wind speed	5 - 10	direct.	West

CLIENT: Project:	Blagg Engineering GCU #204E	-				La	b Orde	r: 0905360
Lab ID:	0905360-01	(· · · · · · · · · · · · · · · · · · ·	С	ollectio	on Date:	5/19/20	009 2:30:00 PM
Client Sample II): MW #2					Matrix:	AQUE	OUS
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 8	21B: VOLATILES							Analyst: DA
Benzene	· · · · · · · · · · · · · ·	140	50	`	µg/L	-	50	5/29/2009 11:19:31 PN
Toluene		83	50		µg/L		50	5/29/2009 11:19:31 PN
Ethylbenzene		1200	50		µg/L		50	5/29/2009 11:19:31 PN
Xylenes, Total		- 6700 ·	100		µg/L		50	5/29/2009 11:19:31 PM
Surr: 4-Bromof	luorobenzene	102	65.9-130		%REC		50	5/29/2009 11:19:31 PN
Lab ID:	0905360-02	· · · · · · · · · · · · · · · · · · ·	· .	Ċ	ollectio	on Date:	5/19/2(009 1:50:00 PM
Client Sample II): MW #3			·		Matrix:	AQUE	OUS
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 80	21B: VOLATILES							Analyst: DAM
Benzene		350	10		µg/L	•	10	5/29/2009 11:49:54 PM
Toluene		170	· 10		µg/L		10	5/29/2009 11:49:54 PM
Ethylbenzene		380	10		µg/L		10	5/29/2009 11:49:54 PN
Xylenes, Total		700	20	1	µg/L		10	5/29/2009 11:49:54 PM
Surr: 4-Bromof	uorobenzene	96.5	65,9-130	4	%REC		10	5/29/2009 11:49:54 PM

*

- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Date: 02-Jun-09

CLIENT:	Blagg Engineering			Clien	t San	iple ID:	MW #1X	
Lab Order:	0905366			Co	llectio	n Date:	5/18/2009	
Project:	GCU #1X			Da	ate Ro	eceived:	5/20/2009	
Lab ID:	0905366-01					Matrix:	AQUEOUS	\$
Analyses		Result	PQL	Qual	Unit	S ,	DF	Date Analyzed
EPA METHOD	8021B: VOLATILES					<u></u>		Analyst: DAM
Benzene	7	150	. 10		μg/L		10	5/30/2009 2:21:49 AM
Toluene		68	10		µg/L		10	5/30/2009 2:21:49 AM
Ethylbenzene		1300	50		µg/L		50	5/30/2009 3:02:38 PM
Xylenes, Total		7200	, 100		µg/L		50	5/30/2009 3:02:38 PM
Surr: 4-Brom	ofluorobenzene	111	65 9-130		%RE(2	10	5/30/2009 2:21:49 AM

Qualifiers:

* Value exceeds Maximum Contaminant LevelE Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

L ENVIRONMENTAL		- Albuquerque, NM 87109	5 Fax 505-345-4107	Analysis Request	(*(s,8) S'*O,	02,4,5 02,62 ((HA) 3, N, 8((A) (A)		ANH) 0158 ANH) 0158 Anions (F,C 2,7) 2001 AOV) 8083 AOV) 8083 AOV) 8083 AOV) 8083 AOV) 8083 AOV) 8083 AOV) 8083 AOV) 8083 AOV											
		4901 Hawkins NE	Tel. 505-345-39		261) (A) (8)	(8021 3as or 3as or))) Hc NB;6	11 + 11 + 1310	99 20 9 4 5 9	EDB (Method TPH Method TPH Method TPH (Method	×		×			۱ ۱			Remarks:		
		aoye			1.R	ちょし	VELEZ	No No.					4						Date Time	00 00	Date Time
bitter i the international int	ame:	も て し も			anager:	Veway V	NEUSON	VOVES	emperature	er Preservativ d.# Type	a Hel		a Hcl			•				1 512C	N.
Me Stand	Project N		Project #:		Project M	~	Sampler	Outcest	Sample	Contain Type and	40m [-		40 m (- 2				,		Received by)	Received by
ENGR. BP AMERICA		P.O. BOX 87	REPORTING 87413	632-1199		Level 4 (Full Validation)				atrix Sample Request ID	rek MN #2		RR MW #3						Iquished by:	1 Unever with	iquished by: V
Client: Budde 2		Mailing Address:	Y	Phone #: 6	email or Fax#:	QA/QC Package:	□ Other	🗆 EDD (Type)	-	Date Time Ma	5/A/09/1430 wat	_	5/19/09 1350 WM	 					Date: Lime: Relink	117 107 1762	Date: Lime: Kellin

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL		www.halienvironmental.com	301 Hawkins NE - Albuquerque, NM 87109	el 505-345-3975 Eax 505-345-4107	Analysis Request	() ⁽	ss/Dies) (0 (0 (1))))))))))))))))))	335rC 1.811 HAs 9,804. 8/8 8/8 8/8 8/8	d 4 200 € 200 € 1,Nd 1,Nd 1,Nd 1,Nd 1,Nd 1,Nd 1,Nd 1,Nd	TPH Method TPH (Method BDB (Method 8310 (PNA 8310 (PNA 8081 Pestic 8081 Pestic 8081 Pestic 8081 Pestic 8081 Pestic 8250 (YO 8250 (YO 8250 (Semi-							S:	
	K Standard 🗆 Rush		CCX # X	Project #:		Project Manager:	NELSON VELET (802)	Sampler. NELSan VELEZ	Dialice to a NOE Strate No and a set	sample femperature	Container Preservative Type and # Type	40ml-2 Hel -1 V						Received by: Contract Time Rems	Received by: Date Time
Otient	CUT BLAGE ENGL, BP AMERICA	-	Mailing Address: P.O. 80X 87	BLAD, NM 87413	Phone #: 632 -1199	email or Fax#:	QA/QC Package: Xextandard Level 4 (Full Validation)	□ Other	EDD (Type)		Date Time Matrix Sample Request ID	-12/09 - WATER MW #1X						19/09/1425 Melenyished by:	Date: Time: Relinquished by: V

irronmental may be subcontracted to other accredited (aboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report. idi activiti

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QA/QC SUMMARY REPORT

Client:	
hund and	

Blagg Engineering

Project: GCU #204E							Work	Order: 0905360
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD RPE	DLimit Qual
Method: EPA Method 8021B: V	olatiles	n et e e e e e e e e e e e e e e e e e e		·				•
Sample ID: 5ML RB		MŖLK			Batch II	D: R33878	Analysis Date:	5/29/2009 9:06:58 AM
Benzene	ND	μg/L	1.0		· ·			
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
Sample ID: 100NG BTEX LCS		LCS			Batch II	D: R33878	Analysis Date:	5/30/2009 5:24:25 AM
Benzene	19.92	µg/L	1.0	99.6	85. 9	113		, ·
Toluene	19.82	µġ/L	1.0	99.1	86.4	113		
Ethylbenzene	20.29	µg/L	1.0	101	83.5	118		
xylenes, Total	60.55	µg/L	2.0	101	83.4	122		
Sample ID: 100NG BTEX LCSD		LCSD			Batch II	D: R3387 8	Analysis Date:	5/30/2009 5:54:51 AM
Benzene	20.56	µg/L	1.0	103	85.9	113	3.18 27	,
Toluene	20.46	µg/L	1.0	102	86.4	i 13	3.14 19)
Ethylbenzene	20.86	µg/L	1.0	104	83.5	118	2.79 10)
Kylenes, Total	62.33	µg/L	2.0	104	83.4	122	2.90 13	3

E

Estimated value

Analyte detected below quantitation limits

RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Date: 02-Jun-09

Page 1

Sam	ole Receipt C	hecklist		x
Client Name BLAGG		Date Recei	ved:	5/20/2009
Work Order Number 0905360		Received	by: TLS	Δ
Checklist completed by:	52C) labels checked by: 	Initials
Matrix: Carrier nam	ne: <u>Grevhound</u>			,
Shipping container/cooler in good condition?	Yes 🗹	No 🗌	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🗹	No 🗔	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes 🗋	No 🗀	N/A 🔽	
Chain of custody present?	Yes 🗹	No 🗖	,	
Chain of custody signed when relinquished and received?	Yes 🗹	No 🗔		· ·
Chain of custody agrees with sample labels?	Yes 🗹	No 🗌		
Samples in proper container/bottle?	Yes 🗹		,	
Sample containers intact?	Yes 🗹	No 🗍		
Sufficient sample volume for indicated test?	Yes 🗹	No 🗆		
All samples received within holding time?	Yes 🗹	No 🗌		Number of preserve
Water - VOA vials have zero headspace? No VOA vials su	ubmitted	Yes 🗹	No 🗔	bottles checked for pH:
Water - Preservation labels on bottle and cap match?	Yes 🗌	No 🗔	N/A 🗹	
Water - pH acceptable upon receipt?	Yes 🗌	No 🗌	N/A 🗹	<2 >12 unless noted
Container/Temp Blank temperature?	3.8°	<6° C Accept	able	below.
COMMENTS:		If given sufficie	ent time to cool.	
·			· .	
Client contacted Date contacted:		Pe	rson contacted	
Contacted by: Regarding:				
Commonto:				
				·
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				·
				· · · · · · · · · · · · · · · · · · ·
Corrective Action	<u>,</u>			
	,		·	
				······································

QA/QC SUMMARY REPORT

Client:	
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Blagg Engineering

Project: GCU #1X		·					V	Vork (Order: 0905366
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPD	Limit Qual
Method: EPA Method 8021B: V	olatiles								
Sample ID: 5ML RB		MBLK			Batch	ID: R33878	Analysis Da	ate: `	5/29/2009 9:06:58 AM
Benzene	ND	µg/L	1.0			•			
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0					•	
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: R33878	Analysis Da	at e :	5/30/2009 5:24:25 AM
Benzene	19.92	µg/L	1.0	99.6	85.9	1 13			
Toluene	19.82	µg/L →	1.0	99.1	86.4	113			
Ethylbenzene	20.29	µg/L	1.0	101	83.5	118			
Xylenes, Total	60.55	µg/L	2.0	101	83.4	122			
Sample ID: 100NG BTEX LCSD		LCSD			Batch	ID: R33678	Analysis Da	ite:	5/30/2009 5:54:51 AM
Benzene	20.56	µg/L	1.0	103	85.9	113	3.18	27	
Toluene	20.46	µg/L	1.0	102	86.4	113	3.14	19	
Ethylbenzene	20.86	µg/L	1.0	104	83.5	118	2.79	10	•
Vienes Total	62 33	unli	20	104	83.4	122	2 00	13	

Qualifiers:

E

J

R

Estimated value

- Analyte detected below quantitation limits
- RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Hall Environmental Analysis La	bulatory, mo.				
· . · .	Sample R	eceipt Cheo	cklist		
Client Name BLAGG		•	Date Received	:	5/20/2009
Work Order Number 0905366		-	Received by:	TLS	AN
Checklist completed by:		5 21 Date	Sample ID Ial	bels checked by:	Initiats
Matrix	Carrier name: G	ireyhound			
Shipping container/cooler in good condition?	· Y	es 🗹	No 🗌	Not Present	
Custody seals intact on shipping container/cool	er? Y	es 🗹	No 🗌	Not Present	Not Shipped
Custody seals intact on sample bottles?	· · · · · · · · · · · · · · · · · · ·	es 🗌	No 🗌	N/A	
Chain of custody present?	Y	es 🔽	No 🗀		
Chain of custody signed when relinquished and	received? Y	es 🗹 🔹	No 🗌		
Chain of custody agrees with sample labels?	Y	es 🗹	No 🗌		
Samples in proper container/bottle?	Y	es 🗹	No 🗌		
Sample containers intact?	Y	es 🗹	No 🗔		
Sufficient sample volume for indicated test?	Y	es 🗹	No 🗀		
All samples received within holding time?	Y	es 🔽	No 🗌		Number of preserved
Water - VOA vials have zero headspace?	No VOA vials submitte	ed 🗌	Yes 🗹	No 🗔	pottles checked for pH:
Water - Preservation labels on bottle and cap m	atch? Y	es 🗌	No 🗖	N/A 🗹	· · · · · · · · · · · · · · · · · · ·
Water - pH acceptable upon receipt?	Y	es 🗌	No 🗌	N/A 🗹	<2 >12 unless noted
Container/Temp Blank temperature?		3.8° <	6° C Acceptable)	Delow.
COMMENTS:		lf	given sufficient	time to cool.	
		-			
		•			
Client contacted	Date contacted:		Perso	on contacted	
Contacted by:	Regarding:				
Comments: Der NV Kle	SIN/09 for	(ollectra	n date /		
· · · · · · · · · · · · · · · · · · ·			<u>.</u>		K
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Corroctivo Antion				· .	
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BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

LIENT: <u>DF AIVICKICA PROD. CO.</u>	CLIENT :	BP	AMERICA	PROD.	<u>CO.</u>
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CHAIN-OF-CUSTODY # : N / A

LABORATORY (S) USED : HALL ENVIRONMENTAL

GCU #204E - BLOW PIT

UNIT I, SEC. 34, T28N, R12W

Date : November 16, 2009

DEVELOPER / SAMPLER : N J V

PROJECT MANAGER: ____ N J V

|--|

						-			
WELL	WELL	WATER	DEPTH TO	TOTAL	SAMPLING	рΗ	CONDUCT	TEMP.	VOLUME
#	ELEV.	ELEV.	WATER	DEPTH	TIME		(umhos)	(celcius)	PURGED
	(ft)	(ft)	(ft)	(ft)					(gal.)
1	103.89	86.22	17.67	27.00	-	-	-	-	-
2R	99.49	83.88	15.61	22.65	1405	7.71	900	13.8	3.50
3	95.66	82.45	13.21	25.00	1415	7.18	800	13.8	5.75
4	98.63	82.97	15.66	21.94	1315	7.10	1,600	13.5	3.00
5	95.98	82.21	13.77	21.78	1345	7.01	1,300	13.4	4.00
			INSTRUM	RATIONS =	4.01/7.00/10.00	2,800			
							1 11		

DATE & TIME = 11/16/09 1330

NOTES: <u>Volume of water purged from well prior to sampling; V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores)</u>. (i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)

Ideally a minimum of three (3) wellbore volumes:

2.00 " well diameter = 0.49 gallons per foot of water.

Comments or note well diameter if not standard 2".

Excellent recovery in all MW's sampled. Collected BTEX sample from MW #3, collected samples for BTEX, TDS, chloride, fluoride, nitrate, sulfate, & iron from MW #2R, #4, & #5.

Top of casing MW #1 ~ 2.40 ft., MW #2R ~ 2.23 ft., MW #3 ~ 2.30 ft., MW #4 ~ 2.63 ft., MW #5 ~ 2.25 ft. above grade.

on-site	12:00	temp	34 F
off-site	3:00	temp	40 F
sky cond.	sunny		
wind speed	0 - 5	direct.	SW

Lab Order: 0 Project: 0 Lab ID: 0 Analyses EPA METHOD 8024 Benzene Toluene Ethylbenzene Xvienes Totel	911317 GCU #204E 911317-01 B: VOLATILES	Result	POL	Collection Date: Date Received: Matrix:	11/16/200 11/17/200	9 2:05:00 PM 9
Project: 0 Lab ID: 0 Analyses EPA METHOD 8021 Benzene Toluene Ethylbenzene Xulenes Total	CU #204E 911317-01 B: VOLATILES	Result	POL	Date Received: Matrix:	11/17/200	9
Lab ID: 0 Analyses EPA METHOD 8024 Benzene Toluene Ethylbenzene Xulenes Total	911317-01 B: VOLATILES	Result	POL	Matrix:	AOUEOU	
Analyses EPA METHOD 8021 Benzene Toluene Ethylbenzene Xylenes Total	B: VOLATILES	Result	POL		AQUEUU	S
EPA METHOD 8021 Benzene Toluene Ethylbenzene Xylenes Totel	B: VOLATILES		1.20	Qual Units	DF	Date Analyzed
Benzene Toluene Ethylbenzene Xvienes Totel						Analyst: NSB
Toluene Ethylbenzene Xylenes Totel		13	10	µg/L	10	11/24/2009 3:39:22 AM
Ethylbenzene Xylenes Totel		ND	10	μg/L	10	11/24/2009 3:39:22 AM
Xvienes Total		240	10	μg/L	10	11/24/2009 3:39:22 AM
Nyionos, rotai	,	1900	20	μg/L	10	11/24/2009 3:39:22 AM
Surr: 4-Bromofiuo	robenzene	100	65.9-130	%REC	10	11/24/2009 3:39:22 AM
EPA METHOD 300.	0: ANIONS				·	Analyst: TAF
Fluoride	:	0.47	0.10	mg/L	1	11/17/2009 1:15:30 PM
Chloride		30	2.0	mg/L	20	11/17/2009 1:32:54 PM
Nitrogen, Nitrite (As I	N)	1.9	0.10	mg/L	1	11/17/2009 1:15:30 PM
Nitrogen, Nitrate (As	N)	0.73	0.10	mg/L	1	11/17/2009 1:15:30 PM
Sulfate		96	· 10	mg/L	20	11/17/2009 1:32:54 PM
EPA METHOD 6010	B: DISSOLVED MET	ALS				Analyst: RAG!
Iron	· .	ND	0.020	mg/L	1	11/20/2009 5:59:11 PM
SM2540C MOD: TO	TAL DISSOLVED SO	LIDS			·	Analyst: MMS
Total Dissolved Solid	S	710	20.0	mg/L	1	11/19/2009 3:11:00 PM

Qualifiers:

Value exceeds Maximum Contaminant Level
 E Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Page 1 of 4

CLIENT:	Blagg Engineering			Clien	t Sample ID:	MW #4	
Lab Order:	0911317	2 · *		Col	lection Date:	11/16/2009	1:15:00 PM
Project:	GCU #204E			Da	te Received:	11/17/2009	
Lab ID:	0911317-02				Matrix:	AQUEOUS	,
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8021B: VOLATILES						Analyst: NSB
Benzene		2200	50		µg/L	50	11/24/2009 5:02:34 PM
Toluene		14	. 10		µg/L	10	11/24/2009 4:09:41 AM
Ethylbenzene		140	10		μg/L ·	10	11/24/2009 4:09:41 AM
Xylenes, Total	Υ.	950	20		µg/L	10	11/24/2009 4:09:41 AM
Surr: 4-Brom	ofluorobenzene	103	65.9-130		%REC	10	11/24/2009 4:09:41 AM
EPA METHOD	300.0: ANIONS						Analyst: TAF
Fluoride		0.57	0.10		mg/L	<u>,</u> 1	11/17/2009 1:50:19 PM
Chloride		950	5.0		mg/L	50	11/18/2009 7:33:37 PM
Nitrogen, Nitrite	(As N)	ND	2.0		mg/L	20	11/17/2009 2:07:44 PM
Nitrogen, Nitrate	e (As N)	ND	0.10		mg/L	~1	11/17/2009 1:50:19 PM
Sulfate		63	10		mg/L	20	11/17/2009 2:07:44 PM
EPA METHOD	6010B: DISSOLVED MET	ALS					Analyst: RAGS
Iron		ND	0.020		mg/L	1	11/20/2009 6:16:05 PM
SM2540C MOD	: TOTAL DISSOLVED SC	LIDS		-	•		Analyst: MMS
Total Dissolved	Solids	2010	20.0	I	mg/L	_ 1	11/20/2009 2:54:00 PM

Qualifiers:

Value exceeds Maximum Contaminant Level
 E Estimated value

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

20 31 00

- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 2 of 4

CLIENT:	Blagg Engineering		٥	Client Sample ID:	MW #5	•
Lab Order:	0911317		r	Collection Date:	11/16/2009	1:45:00 PM
Project:	GCU #204E			Date Received:	11/17/2009	· · · ·
Lab ID:	0911317-03	•	л.	Matrix:	AQUEOUS	
Analyses	······································	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8021B: VOLATILES	· · ·				Analyst: NSB
Benzene		1100	50	µg/L	50	11/24/2009 10:08:16 PM
Toluene	•	200	10	µg/L	10	11/24/2009 4:40:00 AM
Ethylbenzene		430	10	µg/L	10	11/24/2009 4:40:00 AM
Xylenes, Total	·	2800	20	µg/L	10	11/24/2009 4:40:00 AM
Surr: 4-Brome	ofluorobenzene	102	65.9-130	%REC	10	11/24/2009 4:40:00 AM
EPA METHOD :	300.0: ANIONS					Analyst: TAF
Fluoride		0.60	0.10	mg/L	1	11/17/2009 2:25:09 PM
Chloride		370	2.0	mg/L	20	11/17/2009 3:17:22 PM
Nitrogen, Nitrite	(As N)	2.5	2.0	mg/L	20	11/17/2009 3:17:22 PM
Nitrogen, Nitrate	(As N)	2.2	0.10	mg/L	1	11/17/2009 2:25:09 PM
Sulfate		23	0.50	mg/L	1	11/17/2009 2:25:09 PM
	010B: DISSOLVED ME	TALS				Analyst: RAGS
Iron	·	6.0	0.20	mg/L	10	11/23/2009 12:59:37 PM
M2540C MOD:	TOTAL DISSOLVED S	OLIDS		Ň		Analyst: MMS
Total Dissolved	Solids	1090	20.0	mg/L	1	11/20/2009 2:54:00 PM
			-			

 Qualifiers:
 *
 Value exceeds Maximum Contaminant Level

 E
 Estimated value

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 3 of 4

-

Date: 30-Nov-09

	•	Result	PQL Qual Units	DF	Date Analyzed
Analyses		— –			
Lab ID:	0911317-04		Matrix:	AQUEOU	JS
Project:	GCU #204E	•	Date Received:	11/17/200	9
Lab Order:	0911317	• .	Collection Date:	11/16/200	9 2:15:00 PM
CLIENT:	Blagg Engineering		Client Sample ID:	MW #3	

PAMETHUD 8021B: VOLATILES					Analyst NOB
Benzene	240	10	µg/L	10	11/24/2009 5:10:15 AM
Toluene	1700	50	μg/L	50	11/24/2009 10:36:37 PM
Ethylbenzene	600	10	µg/L	10	11/24/2009 5:10:15 AM
Xylenes, Total	1500	. 20	µg/L	10	11/24/2009 5:10:15 AM
Surr: 4-Bromofluorobenzene	104	65.9-130	%REC	10	11/24/2009 5:10:15 AM

Qualifiers:

*

Value exceeds Maximum Contaminant Level Е Estimated value

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits S
- Analyte detected in the associated Method Blank В
- Holding times for preparation or analysis exceeded Н
- MCL Maximum Contaminant Level
- RL **Reporting Limit**

Page 4 of 4

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		2	 A 871	4107			<u> </u>			(AC	<u>)</u> 27.	-ime2) 0728		-	\square				<u>}</u>				F	\mathbb{H}		Ś	ノ È 「	} }\]
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						(8	1201	3) •	SIA	<u>l</u> E	39	BTEX ** N3T8	Ì				Х				X			Ħ	X a	Ĥ,	24	V
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	Rush		にておくの			ager:	sad VELE		Verson Va	JZKKES T	perature: 125	Preservative Type	Here C	HESOH F	HNO3 5	COOL AN	4 - and	HNO3 F	H2504	Coci	Held	H2SOY F	HN03 F	1020	IL LOOM	N and		•
- un Anulu	Xstandaro	Project Nam	ط	Project #:		Project Mana	NEN		Sampler: /	On Ice 22	Sample len	Container Type and #	2-1 w c.h	12-1-121	zsm -	250ml-1	40ml-2	1- [use1	1-1m2201	250m/-1	C-/mat	125m/-1	- #Sz!	1-14050	Received by		Received by ^k	X
stody kecord	=R. / BP ANERCA		82X 87	ELLS MM .	<u>532 - 1199</u>			Level 4 (Full Validation)				Sample Request ID	MUTAR	11	7	4	1210 # Y	ų	~	ť	NW # S	1	1	11 - 11	id by:	a UA	d by: V	
n-10-	15 EV		s: RO.	BLFU	sos) (••					Matrix	WAIRS	*	~	*	WRIER	*	-	~	WATER	. z	Ŵ	//	Relinquishe	Ild.	Relinquishe	
Haih	Bisk) Addres	-	Ú #	Jr Fax#:	Package:	ndard	er	(Type)		Time	7 1405	\$	*	*	1315	2	~	~	1345	=	*	1015	Time:	1545	Time:	
	Client:		Mailing		Phone	email c	QAVQC	X Star	D Oth			Date	11 K 6	\$	*		11/16/00	«	~	~	11/18/09	2	~	11 11	Date:	116/00	Date:	

necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report. -

QA/QC SUMMARY REPORT

Client:	
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Blagg Engineering GCU #204E

Project: GCU #2	04E							Wor	rk Order:	0911317
Analyte	Result	Units	PQL	SPK Va S	SPK ref	%Rec L	owLimit Hi	ghLimit %RP	d RPDLimi	Qual
Method: EPA Method 300.	0: Anions								•	,
Sample ID: MB	• •	MBLK				Batch ID:	R36209	Analysis Date:	11/17/2009	11:48:27 AM
Fluoride	ND	mg/L	0.10					•		
Chloride	ND	mg/L	0.10					•		
Nitrogen, Nitrite (As N)	ND	mg/L	0.10						`	
Nitrogen, Nitrate (As N)	ND	mg/L	0.10					·		
Sulfate	ND	mg/L	0.50							
Sample ID: MB		MBLK				Batch ID:	· R36234	Analysis Date:	11/18/2009	7:22:24 AM
Fluoride	ND	mg/L	0.10							
Chloride	ND	mg/L	0.10							
Nitrogen, Nitrite (As N)	ND	mg/L	0.10							
Nitrogen, Nitrate (As N)	ND	mg/L	0.10							
Sulfate	ND	mg/L	0.50							
Sample ID: LCS		LCS				Batch ID:	R36209	Analysis Date:	11/17/2009 1	12:05:52 PM
Fluoride	0.5238	mg/L	0.10	0.5	0	105	90	110	·	
Chloride	5.072	mg/L	0.10	5	0	101	90	110		
Nitrogen, Nitrite (As N)	1.019	mg/L	0.10	1	0	102	90	110		
Nitrogen, Nitrate (As N)	2.535	mg/L	0.10	2.5	0	101	90	110		
Sulfate	10.16	mg/L	0.50	10	0	102	90	110	<u>_</u>	
Sample ID: LCS		LCS				Batch ID:	R36234	Analysis Date:	11/18/2009	7:39:49 AM
Fluoride	0.5259	mg/L	0.10	0.5	0	105	90	110		
Chloride	5.065	mg/L	0.10	5	0	101	90	110		
Nitrogen, Nitrite (As N)	0.9799	mg/L	0.10	1	0	98.0	90	110		
Nitrogen, Nitrate (As N)	2.510	mg/L	0.10	2.5	0	100	90	110		
Gulfate	10.05	mg/L	0.50	10	0	100	90	110		

Qualifiers:

F

Estimated value

Analyte detected below quantitation limits

RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Page 1

Date: 30-Nov-09

QA/QC SUMMARY REPORT

2			
\mathbf{C}	lie	nt	

oject:

Blagg Engineering GCU #204E

Work Order: 0911317

Date: 30-Nov-09

Analyté	Result	Units	PQL	SPK Va	SPK ref	%Rec L	.owLimit Hi	ighLimit %F	RPD	RPDLimit	Qual
Tethod: EPA Method 8021B: \	/olatiles										
ample ID: 5ML RB		MBLK				Batch ID:	R36309	Analysis Da	nte:	11/23/2009 9.	:27:00 AN
Senzene	ND	µg/L	1.0								
Voluene	ND	µg/L	1.0			•					
thylbenzene	ND	µg/L	1.0								
(ylenes, Totai	ND	΄μ g/L	2.0		· •						
Sample ID: 5ML RB	•	MBLK				Batch ID:	R36327	Analysis Da	te:	11/24/2009 9:	:30:18 AN
enzene	ND	µg/L	1.0								
foluene	ND	µg/L	1.0								
thylbenzene	ND	µg/L	1.0								
lylenes, Total	ND	µg/L	2.0			'					
ample ID: 100NG BTEX LCS		LCS				Batch ID:	R36309	Analysis Dat	te:	11/23/2009 7:	:34:42 PN
lenzene	20.32	µg/L	1.0	20	0	102	85.9	113			
oluene	21.67	µg/L	1.0	20	0,	108	86.4	113			
thylbenzene	21.49	µg/L	1.0	20	0.116	107	83.5	118			
vienes, Total	63.92	µg/L	2.0	60	0	107	83.4	122			
ample ID: 100NG BTEX LCS		LCS				Batch ID:	R36327	Analysis Dat	tè:	11/24/2009 6:	:03:12 PN
lenzene	19.83	µg/L	1.0	20	0	99.1	85.9	113			
oluene	20.24	µg/L	1.0	20	0	101	86.4	113			
thylbenzene	19.72	µg/L	1.0	20	0	98.6	83.5	118			
ylenes, Total	59.28	µg/L	2.0	60	0	98.8	83.4	122			
lethod: EPA Method 6010B: D	issolved Me	itals							_		
ample ID: MB		MBLK				Batch ID:	R36271	Analysis Dat	te:	11/20/2009 4:	08:59 PM
ion ,	ND .	mg/L	0.020			• ,					
ample ID: MB		MBLK				Batch ID:	R36295	Analysis Date	le:	11/23/2009 12:	50:27 PM
n · ·	ND	ma/l	0.020				··· + +				
ample ID: LCS	, 	105	0.020			Batch ID	R36274	Analysis Det	e	11/20/2009 4-1	11:44 PM
	A 176 -	LU0	A ARE	<u>~</u> ~	~	05 2	00 '	100			T FW
amale ID- 100	U.4764	mg/L	0.020	U.5	U	SOUT	OU Dagaar	Analusia Der	<u>o</u> .	11/02/0000 10	52-04
	A 105	LC2	A		-	Datch (D)	130295	Andiysis Dat	ιŪ.	1 112012009 123	JUZI PN
on .	0.4981	mg/L	0.020	0.5	0	99.6	80	120			
lethod: SM2540C MOD: Total	Dissolved S	olids				_					
ample ID: MB-20863		MBLK				Batch ID:	20663	Analysis Date	e:	11/ 19/2009 3 ::	11:00 PM
btal Dissolved Solids	ND	mg/L	20.0							1	
ample ID: MB-20676		MBLK				Batch ID:	20676	Analysis Date	e:	11/20/2009 2:5	54:00 PM
otal Dissolved Solids	ND	mg/L	20 .0								
ample ID: LCS-20663		LCS	.			Batch ID:	20663	Analysis Date	e:	11/19/2009 3:1	11:00 PM
otal Dissolved Solide	1021	ma/l	20.0	1000	n	102	80	120		,. 	
ample ID: I CO-20074	1021	y/∟ / ∩ ≎	20.0	1000	U	Retch ID-	20676	Analysis Date	e.	11/20/2000 0.0	34-00 DM
		100	A A		-		01044	, maryora Dali			rivi
Dial Dissolved Solids	1012	mg/L	20.0	1000	0	101	80	120		· ·	
•							•				

Qualifiers:

Έ

R

Estimated value

Analyte detected below quantitation limits

RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Page 2

Hall Environmental Analysis Labora	tory, Inc.		•	· · · ·
	Sample Receipt C	hecklist	- 4	4447/0000
Client Name BLAGG		Date Receiv	red:	11/17/2009
Work Order Number 0911317			y: ARS	NN -
Checklist completed by:			-	Initials
Matrix:	Carrier name: <u>Greyhound</u>			
Shipping container/cooler in good condition?	Yes 🖌	No 🗖	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🗹	No 🗖	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes 🗌	Νο	N/A	
Chain of custody present?	Yes 🗹	No 🗔		
Chain of custody signed when relinquished and receive	ed? Yes 🗹	No 🗔		
Chain of custody agrees with sample labels?	Yes 🗹	No 🗌		·
Samples In proper container/bottle?	Yes 🗹	No 🗔		
Sample containers Intact?	Yes 🗹	No 🔲		
Sufficient sample volume for indicated test?	Yes 🗹	No 🗌		. •
All samples received within holding time?	Yes 🗹	No 🗖	· . ·	Number of preserved
Water - VOA viais have zero headspace? No V	/OA vials submitted	Yes 🗹	No 🗖	pH:
Water - Preservation labels on bottle and cap match?	Yes 🗹	No 🗖	N/A 🗌	
Water - pH acceptable upon receipt?	Yes 🗹	No 🗔	N/A 🗆	<2 >12 unless noted
Container/Temp Blank temperature?	4.6°	<6° C Acceptai	ble	
COMMENTS:			it time to cool.	
			,	
Client contacted Date co	ontacted:	Per	son contacted	
Contacted by: Regard	ling:			
Comments:				·
				•
· · · · · · · · · · · · · · · · · · ·				
Corrective Action				
		1		
		·		······································

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

LIENT :	BP	AMERICA	PROD.	CO.

N/A CHAIN-OF-CUSTODY # :

LABORATORY (S) USED : HALL ENVIRONMENTAL

GCU # 204E - BLOW PIT

UNIT I, SEC. 34, T28N, R12W

Date : February 19, 2010

DEVELOPER / SAMPLER :

NJV **PROJECT MANAGER**:

NJV

Filename : 02-19-10.WK4

							-		
WELL	WELL	WATER	DEPTH TO	TOTAL	SAMPLING	ρН	CONDUCT	TEMP.	VOLUME
#	ELEV.	ELEV.	WATER	DEPTH	TIME		(umhos)	(celcius)	PURGED
	(ft)	(ft)	(ft)	(ft)					(gal.)
1	103.89	85.59	18.30	27.00	-	-	_	-	_
2R	99.49	83.44	16.05	22.65	0815	7.86	1,000	11.3	3.25
3	95.66	82.22	13.44	25.00	0900	7.36	800	10.9	5.75
4	98.63	82.81	15.82	21.94	0940	7.02	2,000	11.6	3.00
5	95.98	82.14	13.84	21.78	1020	6.99	1,900	10.5	4.00
	INSTRUMENT CALIBRATIONS =						2,800		
	•			02/18/10	1325				

DATE & TIME = || 02/18/10 ||

NOTES : Volume_of_water_purged_from_well_prior_to_sampling; V = pi X r2 X h_X 7.48 gal /ft3) X 3 (wellbores). (i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)

Ideally a minimum of three (3) wellbore volumes:

2.00 " well diameter = 0.49 gallons per foot of water.

Comments or note well_diameter_if_not_standard_2 ".

Excellent recovery in all MW's sampled (MW #2R, #3, #4, & #5). MW #2R, #4, #5 - pale vellowish orange tint in appearance. MW #3 - dark gray tint in appearance. Collected samples for BTEX per US EPA Method 8021B.

Top of casing MW #1 ~ 2.40 ft., MW #2R ~ 2.23 ft., MW #3 ~ 2.30 ft., MW #4 ~ 2.63 ft., MW #5 ~ 2.25 ft. above grade

on-site	7:33	temp	30 F				
 off-site 	10:30	temp 32					
sky cond.	cloudy						
wind speed	0-10	direct.	E				

CLIENT: Project:	Blagg Engineering GCU #204E				•	Lab Order	: 1002460
Lab ID:	1002460-01		•	(Collection	Date: 2/19/20	10 8:15:00 AM
Client Sample I	D: MW #2R				N	Iatrix: AQUEC)US
Analyses	· ·	Result	PQL	Qual	Units	DF	Date Analyzed
	021B: VOLATILES	·		<u></u>			Anaivst: NSE
Benzene		ND	10		µg/L	10	2/27/2010 2:51:09 AM
Toluene		ND	10		µg/L	10	2/27/2010 2:51:09 AM
Ethylbenzene		150	10		μg/L	10	2/27/2010 2:51:09 AM
Xylenes, Total		1300	- 20		µg/L	10	2/27/2010 2:51:09 AM
Surr: 4-Bromo	fiuorobenzene	104	65.9-130		%REC	10	2/27/2010 2:51:09 AM
							·
ab ID:	1002460-02		-	(Collection	Date: 2/19/20	10 9:00:00 AM
Client Sample ID: MW #3					M	latrix: AQUEC	OUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
PA METHOD 8	021B: VOLATILES						Analyst: NSE
Benzene		96	10		µg/L	10	2/27/2010 4:22:18 AM
Toluene	1	940	10		µg/L	10	2/27/2010 4:22:18 AM
Ethylbenzene		480	10		µg/L	10	2/27/2010 4:22:18 AM
Xylenes, Total		1100	· 20		µg/L	10	2/27/2010 4:22:18 AM
Surr: 4-Bromo	fluorobenzene	108	65.9-130		%REC	10	2/27/2010 4:22:18 AM
ab ID:	1002460-03				Collection	Date: 2/19/201	10 9:40:00 AM
Client Sample I	D: MW #4			·	M	latrix: AQUEC	OUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
PA METHOD 8	021B: VOLATILES						Analyst: NSE
Benzene	× .	5800	100		µg/L	100	3/1/2010 4:59:47 PM
Toluene		14	10		µg/L	10	2/27/2010 6:53:39 AM
Ethylbenzene		500	10		µg/L	10	2/27/2010 6:53:39 AM
Xylenes, Total		1800	20		µg/L	10	2/27/2010 6:53:39 AM
Surr: 4-Bromot	fluorobenzene	109	65.9-130		%REC	10	2/27/2010 6:53:39 AM
	1002460 04				Collection	Data: 2/10/201	0 10:20:00 434
ab ID: 'lient Sample II	1002400-04 D: MW #5		t^{\pm}	•	_onection M	latrix: AOUEO	10 10.20.00 AM
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
	021B: VOLATILES					1. I LANS	Analyst: NSE
Benzene		790	10		µg/L	10	2/27/2010 8:24:19 AM
Toluene		100	10		µg/L	10	2/27/2010 8:24:19 AM
Ethvibenzene		370	10		µg/L	10	2/27/2010 8:24:19 AM
Xylenes, Total		2600	100		µg/L	50	2/27/2010 7:54:11 AM
Surr: 4-Bromol	fluorobenzene	103	65.9-130		%REC	10	2/27/2010 8:24:19 AM
	· · · · · · · · · · · · · · · · · · ·						
Qualifiers: *	Value exceeds Maximum C	ontaminant Level			B Analyte	e detected in the asso	ciated Method Blank
Е	Estimated value				H Holding	g times for preparati	on or analysis exceeded
J	Analyte detected below quar	ntitation limits		Μ	ICL Maxim	um Contaminant Le	vel
NC	Non-Chlorinated			1	ID Not De	tected at the Reporti	ng Limit Dage 1
POI	Practical Quantitation Limit				S Sniker	ecoveru outside acce	ented recovery limits 50

 HALL ENVIRONMENTAL HALL ENVIRONMENTAL ANALYSIS LABORATORY www.hallenvironmental.com 	4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107 Analysis Request	۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲	Y or N) Y or N) Y or N) Y or N) Y or N)	Arrest Action of the second state of the secon						Remarks: Remarks: Remarks: Contracted data will be clearly notated on the analytical report.
▲ Standard □ Rush Project Name:	Project #:	Project Manager: NELSON VELEE	Sampler: NELSO, VELEZ Orice NESS VELEZ	Container Preservative Type and # Type	2-40ml Hert 1	2-40ml Had + 2	2-4001 Hat 2 3	2-40ml Heit y		Received the Time Date Time Received the Date Time Date Time Time received the other accredited laboratomes. This serves as notice
Client: BLAGE EVER, BP America	BLFD. NM 87413 Phone #: (505) 632-1199	email or Fax#: QA/QC Package:	C Standard C Level 4 (Full Validation)	Date Time Matrix Sample Request ID	"/19/10 0815 writer NW # 2R	2/19/10 0900 WRIER MW # 3	-19/10 0940 WAYER INW # 4 (1)	1/1/12 1020 WW # 5		Date: Time: Relinquished by: 2/25/10 1/6/15 7/1/mm, UM Date: Time: Relinquished by: If necessary, samples submitted to Hall Environmental may be subcont

OA/OC SUMMARY REPORT

		ττ	- ~ -								
Client: Project:	Blagg Engineering GCU #204E		,						Work	Order:	1002460
Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec L	.owLimit Hi	ghLimit	%RPD	RPDLimi	Qual
lethod: EPA	Method 8021B: Volatiles					· ,					
ample ID: 5M	IL RB	MBLK				Batch ID:	R37547	Analys	is Date:	2/26/2010	9:10:28 AM
Benzene	ND	µg/L	1.0								
oluene	ND	µg/L	1.0								
thylbenzene	ND	µg/L	1.0								
Yvlenes, Total	ND	µg/L	2.0								
Sample ID: . 5M	IL RB	MBLK				Batch ID:	R37565	Analys	is Date:	3/1/2010	9:25:06 AM
enzene .	ND	μg/L	1.0								
oluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1,0							•	
Kylenes, Total	ND	µg/L	2.0								
ample ID: 10	ONG BTEX LCS	LCS				Batch ID:	R37547	Analysi	is Date:	2/26/2010	8:48:12 PM
Benzene	22.46	μg/L	1.0	20	0	112	85.9	113		•	
Toluene	22.01	µg/L	1.0	20	0	110	86.4	113			
thylbenzene	22.18	µg/L	1:0	20	0	111	83.5	`118			
ylenes, Total	66.34	µg/L	2.0	60	0.	111	83.4	122			
Sample ID: 100	ONG BTEX LCS	LCS				Batch ID:	R37565	Analysi	is Date:	3/2/2010	6:07:50 AM
Benzene	22.44	µg/L	1.0	20	0	112	85.9	113			
oluene	22.13	µg/L	1.0	20	0	111	86.4	113			
Ethylbenzene	21.98	µg/L	1.0	20	0.148	109	83.5	118			
Xylenes, Total	65.70	µg/L	2.0	60	0	110	83.4	122			

E

J

ND

Estimated value

Analyte detected below quantitation limits

Not Detected at the Reporting Limit

H Holding times for preparation or analysis exceeded

.

- Non-Chlorinated NC
- R RPD outside accepted recovery limits

Page 1

Date: 02-Mar-10

	Sample Receipt C	hecklist		
Client Name BLAGG		Date Receiv	ved:	2/24/2010
Work Order Number 1002460		Received	by: TLS	
		Sample ID	labels checked by:	
Checklist completed by:	Date	allio	<u></u>	រពាលខាន
v O	· · ·			
Matrix: Carr	ier name: <u>Greyhound</u>	• • • •		
Shipping container/cooler in good condition?	Yes 🗹		Not Present	1
Custody seals intact on shipping container/cooler?	Yes 🗹	No 🗔	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes 🗌	No 🗖	N/A	
Chain of custody present?	Yes 🖌	No 🗌		
Chain of custody signed when relinquished and received?	Yes 🔽	No 🗌		
Chain of custody agrees with sample labels?	Yes 🗹	No 🗔		
Samples in proper container/bottle?	Yes 🗹	No 🗌		
Sample containers intact?	Yes 🗹	No 🗌		
Sufficient sample volume for indicated test?	Yes 🗹	No 🗌		
All samples received within holding time?	Yes 🗹	No 🗌		Number of preserve
Water - VOA vials have zero headspace? No VOA	vials submitted	Yes 🗹	No 🗔	pH:
Water - Preservation labels on bottle and cap match?	Yes 🗌	No 🗌	N/A 🗹	:
Water - pH acceptable upon receipt?	Yes 🗌	No 🗌	N/A 🗹	<2 >12 unless noted
Container/Temp Blank temperature?	3.4°	<6° C Accepta	able	
COMMENTS:		It given sufficie	ent time to cool.	
			•	
				·
		•		
	-1	D -		
	cied:	Pe	rson contacted	
Contacted by: Regarding:	<u> </u>			•
Comments:				
		,	-	
		•		
Corrective Action			· ·	
· · ·				
				· · · · · · · · · · · · · · · · · · ·

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT :	BP	AMERICA	PROD.	<u>CO.</u>	
GCU # 20	4E -	BLOW PIT			•

CHAIN-OF-CUSTODY # : N/A

LABORATORY (S) USED : HALL ENVIRONMENTAL

DEVELOPER / SAMPLER : NJV

Filename : 05-19-10.WK4

UNIT I, SEC. 34, T28N, R12W

Date : May 19, 2010

Filename :	05-19-10.	VK4			ſ	PROJECT	MANAGER :	N J V	
WELL	WELL	WATER	DEPTH TO	TOTAL	SAMPLING	pН	CONDUCT	TEMP.	VOLUME
#	ELEV.	ELEV.	WATER	DEPTH	TIME		(umhos)	(celcius)	PURGED
	(ft)	(<u>ft</u>)	(ft)	(ft)					(gal.)
1	103.89	85.76	18.13	27.00	-	-	· _	-	-
2R	99.49	83.61	15.88	22.65	1045	7.75	1,100	17.9	3.25
3	95.66	82.21	13.45	25.00	1115	7.19	1,000	15.9	5.75
4	98.63	82.85	15.78	21.94	1145	6.85	2,700	17.3	3.00
5	95.98	82.04	13.94	21.78	1215	6.82	2,600	15.0	3.75
			INSTRUM	ENT CALIE	BRATIONS =	4.01/7.00/10.00	2,800		· · · · · · · · · · · ·

DATE & TIME = 05/19/10 1035

NOTES : Volume of water purged from well prior to sampling; V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores). (i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)

Ideally a minimum of three (3) wellbore volumes:

2.00 " well diameter = 0.49 gallons per foot of water.

Comments or note well diameter if not standard 2".

Excellent recovery in all MW's sampled (MW #2R, #3, #4, & #5). MW #2R, #4, #5 - pale yellowish orange tint in appearance. MW #3 - dark gray tint in appearance. Collected samples for BTEX per US EPA Method 8021B.

Top of casing MW #1 ~ 2.40 ft., MW #2R ~ 2.23 ft., MW #3 ~ 2.30 ft., MW #4 ~ 2.63 ft., MW #5 ~ 2.25 ft. above grade.

on-site	10:22	temp	62 F
off-site	12:25	temp	67 F
sky cond.	Sunny	-	
wind speed	10 - 20 ,	direct.	W - WNW

Date: 04-Jun-10

CLIENT:	Blagg Engineering
Lab Order:	1005611
Project:	GCU #204E
Lab ID:	1005611-01

Client Sample ID: MW #2R Collection Date: 5/19/2010 10:45:00 AM Date Received: 5/21/2010 Matrix: AQUEOUS

Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES				•	Analyst: NSB
Benzene	1 1	1.0 ·	µg/L	1	6/1/2010 5:20:24 PM
Toluene	1.8	1.0	μg/L	1	6/1/2010 5:20:24 PM
Ethylbenzene	220 ⁻	10	µg/L	10	6/1/2010 4:50:14 PM
Xylenes, Total	1800	20	µg/L	10	6/1/2010 4:50:14 PM
Surr: 4-Bromofluorobanzene	101	65.9-130	%REC	10	6/1/2010 4:50:14 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Date: 04-Jun-10

10

10

6/1/2010 6:51:41 PM

6/1/2010 6:51:41 PM

CLIENT:	Blagg Engineering			Client Sample II	D: MW #3			
Lab Order:	1005611			Collection Dat	e: 5/19/2010	0 11:15:00 AM		
Project:	GCU #204E			Date Receive	d: 5/21/2010	5/21/2010		
Lab ID:	1005611-02			Matri	K: AQUEO	US		
Analyses		Result	PQL	Qual Units	DF	Date Analyzed		
EPA METHOD	8021B: VOLATILES	· · · · · · · · · · · · · · · · · · ·		<u>_</u>		Analyst: NSB		
Benzene		210	10	µg/L	10	6/1/2010 6:51:41 PM		
Toluene		2200	100	µg/L	100	6/2/2010 1:17:28 PM		
Ethylbenzene		680	. 10	μg/L	. 10	6/1/2010 6:51:41 PM		

20

65.9-130

µg/L

%REC

2500

118

Qualifiers:

Xylenes, Total

Surr: 4-Bromofluorobenzene

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Date: 04-Jun-10

Analyses		Result	PQL Qual Units	DF	Date Analyzed
Lab ID:	1005611-03		Matrix:	AQUEOUS	· , ·
Project:	GCU #204E		Date Received:	5/21/2010	· ·
Lab Order:	1005611		Collection Date:	5/19/2010 1	1:45:00 AM
CLIENT:	Blagg Engineering		Client Sample ID:	MW #4	

EPA METHOD 8021B: VOLATILES		,			Analyst: NSB
Benzene	5200	100	µg/L	100	6/1/2010 10:54:06 PM
Toluene	42	10	µg/L	10	6/1/2010 11:24:15 PM
Ethylbenzene	470	10	µg/L	10	6/1/2010 11:24:15 PM
Xylenes, Total	1500	20	µg/L	10	6/1/2010 11:24:15 PM
Surr: 4-Bromofluorobenzene	102	65.9-130	%REC	10	6/1/2010 11:24:15 PM

Qualifiers:

- Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Date: 04-Jun-10

CLIENT:Blagg EngineeringLab Order:1005611Project:GCU #204ELab ID:1005611-04

Client Sample ID: MW #5 Collection Date: 5/19/2010 12:15:00 PM

Date Received: 5/21/2010 Matrix: AQUEOUS

Analyses	Result PQ		Qual Units	DF	Date Analyzed			
EPA METHOD 8021B: VOLATILES					Analyst: NSB			
Benzene	1200	100	µg/L	100	6/2/2010 12:24:49 AM			
Toluene	180	10	µg/L	10	6/2/2010 12:55:07 AM			
Ethylbenzene	370	10	µg/L	10	6/2/2010 12:55:07 AM			
Xylenes, Total	2600	200	µg/L	100	6/2/2010 12:24:49 AM			
Surr: 4-Bromofluorobenzene	100	65.9-130	%REC	10	6/2/2010 12:55:07 AM			

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

			4901 Hawkins NE - Albuquergue, NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis Request		PCB's PO4,SC 685 01 5 (8021	N) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	+ 35 + 35 + 35 + 35 + 35 + 35 + 35 + 35	ATEX + MTE TPH Methoc TPH Methoc TPH (Methoc B310 (PUA d Anions (F,Cl Anions (F,Cl Anions (F,Cl AOV) 8 Metho B3260B (VOA Ac AOV) 8081 Pesticl AOV) 8081 Pesticl B081 Pesticl Cemi- B208 (VOA Ac AOV) 8081 B081 Pesticl B081 Pestic							Remarks:	
	🖓 Standard 🛛 Rush	Project Name:	202 # 30 先	Project #		Project Manager:	NEUSON VEUEZ	Sampler: NEWSON VEVEZ		Container Preservative Type and # Type	2-40m/444 1	2-40m/ "coor 2	2-40ml 4cl + 3	2-10ml Helt y			Received by: Date diversion	Received by: V Date Time
Chain-or-Custody Record	Client & LAGE EVER. / BP ANERICH !		Mailing Address: P.O. BOX 87	BUTO. NM 87413	Phone #: (565) <32-1199	email or Fax#:	QA/QC Package:	Accreditation	□ EDD (Type)	Date Time Matrix Sample Request ID	1/19/10 PYS WARR MW #2R	7/19/10/115 wetter 1010 # 3	5/19/m 1145 WA #4	5/19/10 1215 WATER MW # 5			Date: Time: Relinquished by Light 1600 Il Mr. UG	Date: Time: Relinquished by:

22.49

µg/L

QA/QC SUMMARY REPORT

Hier	ıt:
~	
	ant

Surr: 4-Bromofluorobenzene

Blagg Engineering

GCU #204E Work Order: oject: 1005611 nalyte PQL SPK Val SPK ref %Rec LowLimit HighLimit %RPD **RPDLimit Qual** Result Units ethod: EPA Method 8021B: Volatiles ample ID: 5ML RB Batch ID: R39030 Analysis Date: 6/1/2010 9:34:51 AM MBLK enzene ND µg/L 1.0 luene ND μg/L 1.0 hylbenzene ND µg/L 1.0 vienes, Total ND µg/L 2.0 Surr: 4-Bromofluorobenzene 65.9 130 18.26 µg/L 0 20 0 91.3 6/1/2010 7:52:20 PM mple ID: 100NG BTEX LCS LCS Batch ID: R39030 Analysis Date: µg/L 20 0 97.3 87.9 121 enzene 19.46 1.0 20 0 99.0 83 124 Sluene 19.81 µg/L 1.0 122 20 0 99.4 81.7 hylbenzene 19.87 µg/L 1.0 (lenes, Total 62.71 µg/L 2.0 60 Ο. 105 85.6 121 Surr: 4-Bromofluorobenzene 20 0 102 81.2 129 20.45 Hg/L 0 6/1/2010 8:22:56 PM mple ID: 100NG BTEX LCSD Batch ID: R39030 Analysis Date: LCSD 1.0 20 0 100 87.9 121 3.15 14.6 20.08 µg/L nzene 4.27 oluene 20.67 µg/L 1.0 20 0 103 83 124 18 hylbenzene 20 0 105 81.7 122 5.36 15.8 20.96 µg/L 1.0 3,64 15.9 µg/L 60 0 108 85.6 121 lenes, Total 2.0 65.03

20

0

0

112

81.2

129

0

0

ualifiers:

Estimated value Analyte detected below quantitation limits Not Detected at the Reporting Limit

- H Holding times for preparation or analysis exceeded
- NC Non-Chlorinated
- R RPD outside accepted recovery limits

Page 1

Sampi	e Hec	eipt Ci	Dete Bassiv	. d.		5/21/2010	
			Date Heceive	а: "Те		5/21/2010	
				y: ILO	hur		
Checklist completed by:		56		adels checkeu	Dy.	Initials	
Signature		Cate					
Matrix: Carrier name	e: <u>Grey</u>	/hound					
				-			
Shipping container/cooler in good condition?	Yes			Not Present			
Custody seals intact on shipping container/cooler?	Yes		No 🗌	Not Present		Not Shipped	
Custody seals intact on sample bottles?	Yes		No 🗋 🗉	N/A	\checkmark		
Chain of custody present?	Yes		No 🗔				
Chain of custody signed when relinquished and received?	Yes		No 🗌				
Chain of custody agrees with sample labels?	Yes		No 🗌				
Samples in proper container/bottle?	Yes		No 🗖				
Sample containers Intact?	Yes		No 🗌				
Sufficient sample volume for indicated test?	Yes		No 🗌				
All samples received within holding time?	Yes		No 🗌			Number of	i preserve
Water - VOA vials have zero headspace? No VOA vials sub	mitted		Yes 🗹	No 🗌		pH:	SCREU IOI
Water - Preservation labels on bottle and cap match?	Yes		No 🗌	N/A 🗹			
Water - pH acceptable upon receipt?	Yes		No 🗔	N/A 🗹		<2 >12 unit below	ess noted
Container/Temp Blank temperature?	-0.	6°	<6° C Acceptab	le		001011.	
COMMENTS:			If given sufficien	t time to cool.			
, . ,							
1		÷					
		• •				•	
					•		
Client contacted Date contacted:			Pers	on contacted		· .	
Contacted by: Regarding:		×					·
				, ,			
	•			(
		<u> </u>				· ·	· <u>···</u>
				· · ·	```		
Corrective Action				···		• 	·····
				· · ·			

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO	
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CHAIN-OF-CUSTODY # : N / A

GCU # 204E - BLOW PIT

LABORATORY (S) USED : HALL ENVIRONMENTAL

UNIT I, SEC. 34, T28N, R12W

Date : October 30, 2010

DEVELOPER / SAMPLER : N J V

PROJECT MANAGER:

NJV

Filename : **10-30-10.WK4**

						-			
WELL	WELL	WATER	DEPTH TO	TOTAL	SAMPLING	рН	CONDUCT	TEMP.	VOLUME
#	ELEV.	ELEV.	WATER	DEPTH	TIME		(umhos)	(celcius)	PURGED
	(ft)	(ft)	(ft)	(ft)					(gal.)
1	103.89	85.55	18.34	27.00	-	-	-	-	-
2R	99.49	83.94	15.55	22.65	1010	7.82	1,000	16.9	3.50
3	95.66	82.97	12.69	25.00	1045	6.95	1,100	16.2	6.00
4	98.63	83.16	15.47	21.94	1140	6.73	1,900	17.1	3.25
5	95.98	82.66	13.32	21.78	1215	6.88	1,300	17.4	4.25
INSTRUMENT CALIBRATIONS =						4.01/7.00/10.00	2,800		
· · · ·							0000		

DATE & TIME = 10/28/10 0800

NOTES : <u>Volume of water purged from well prior to sampling; V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores)</u>. (i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)

Ideally a minimum of three (3) wellbore volumes:

2.00 " well diameter = 0.49 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Excellent recovery in all MW's sampled (MW #2R, #3, #4, & #5). MW #2R, #4, #5 - pale yellowish orange tint in appearance. MW #3 - dark gray tint in appearance. Collected samples for BTEX per US EPA Method 8021B.

Top of casing MW #1 ~ 2.40 ft., MW #2R ~ 2.23 ft., MW #3 ~ 2.30 ft., MW #4 ~ 2.63 ft., MW #5 ~ 2.25 ft. above grade.

on-site	9:30	temp	47 F
off-site	12:30	temp	66 F
sky cond.	Sunny	_	
wind speed	0 - 10	direct.	E -ESE

CLIENT: Project:		Blagg Engineering GCU #204E		۰۰ د ۲۰ ۱۳	•		La	b Order:	1011106
Lab ID:		1011106-01				Collecti	on Date:	10/30/20	10 10:00:00 AM
Client San	aple Il	D: MW #2R					Matrix:	AQUEO	US
Analyses			Result	PQL	Qual	Units		DF	Date Analyzed
EPA METH	10D 8	260: VOLATILES SHOR	TLIST						Analyst: RAA
Benzene			6.3	1.0		µg/L		1	11/8/2010 5:44:18 PM
Toluene			ND	1.0		µg/L		1	11/8/2010 5:44:18 PM
Ethylbenze	ene		86	1.0		µg/L		1	11/8/2010 5:44:18 PM
Xylenes, T	otal		410	20		µg/L		10	11/8/2010 5:18:04 PM
Surr: 4-I	Bromof	luorobenzene	97.7	76.4-106		%REC		1	11/8/2010 5:44:18 PM
Lah ID:		1011106-02	· · · · · · · · · · · · · · · · · · ·			Collecti	on Date:	10/30/201	0 10:45:00 AM
Client Sam	ple II	D: MW #3				~~~~~~	Matrix:	AOUEOI	JS
Inalyses			Result	PQL	Qual	Units		DF	Date Analyzed
PA METH	OD 82	260: VOLATILES SHOR	TLIST	-				. <u>.</u>	Analyst: RAA
Benzene			350	10		µg/L		10	11/8/2010 6:36:54 PM
Toluene	÷		210	10		µg/L		10	11/8/2010 6:36:54 PM
Ethylbenze	ne		340	10		µg/L		10	11/8/2010 6:36:54 PM
Xylenes, To	otal	、	1100	20		µg/L		10	11/8/2010 6:36:54 PM
Surr: 4-E	Bromofi	uorobenzen e	98.4	76.4-106	•	%REC		10	11/8/2010 6:36:54 PM
Lab ID:		1011106-03			(Collectio	on Date:	10/30/201	0 11:35:00 AM
Client Sam	ple ID	•: MW #4					Matrix:	AQUEOU	IS
Analyses			Result	PQL	Qual	Units		DF	Date Analyzed
PA METH	OD 82	60: VOLATILES SHOR	T LIST						Analyst: RAA
Benzene			6500	100		µg/L		100	11/8/2010 7:03:23 PM
Toluene			63	10		µg/L		10	11/8/2010 7:29:44 PM
Ethylbenze	ne		600	10		µg/L		10	11/8/2010 7:29:44 PM
Xylenes, To)tai Liene en		1500	20		µg/L		10	11/8/2010 7:29:44 PM
Surr: 4-B	romoni	Joropenzene	98.7	/6.4-106		%REC		10 '	11/8/2010 7:29:44 PM
ab ID:		1011106-04			(Collectio	on Date:	10/30/201	0 12:15:00 PM
lient Sam	ple ID	: MW #5					Matrix:	AQUEOU	S
nalyses			Result	PQL	Qual	Units		DF	Date Analyzed
PA METHO	OD 82	60: VOLATILES SHORT							Analyst: RAA
Benzene			380	. 10		µg/L		10 1	1/8/2010 8:22:41 PM
Toluene			140	10		µg/L		10 1	1/8/2010 8:22:41 PM
Ethylbenzer	18 1-1		450	- 10		µg/L		10 1	1/8/2010 8:22:41 PM
Xylenes, Total 2200				200		µg/L		100 1	1/8/2010 7:56:09 PM
Surr: 4-B	romotiu	IOTODENZENE	98.5	/6.4-106		%REC		10 1	178/2010 8:22:41 PM
)nalifiers:	•	Value exceeds Maximum Co	intaminant I evel					in the associa	ated Method Blank
[4411166 31	F	Estimated value			, I	- Huldi	ng times for	nrengration	or analysis exceeded
	J	Analyte detected below onen	titation limits		M	CL Mavi	mum Conte	minant Level	or analysis expected
	NC	Non-Chlorinated			N	D Not	Detected at th	he Reporting	Limit
				1	-				·

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		men	nbuər	505	: Req		s'809 :	7808 /	səpi	sitee9 1808					· 								
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			lawkii)5-34				(1.8	.7 P	rPH (Methc		ļ											
			901 H	^r el. 5((ləs	as/Die:	12B (G	98 F	nethoo									 		$\mid \downarrow \downarrow$	ks:	
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QA/QC SUMMARY REPORT

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oluene ND µg/L 1.0 Ethylbenzene ND µg/L 1.0 Xylenes, Total ND µg/L 2.0	
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Xylenes, Total ND µg/L 2.0	
ample ID: 100ng Ics LCS Batch ID: R42024 Analysis Date: 11/8/2	0 10:43:06 AM
enzene 20.74 µg/L 1.0 20 0 104 84.6 109	
Toluene 19.27 µg/L 1.0 20 0 96.3 81 114	
Sample ID: 100ng Ics2 LCS Batch ID: R42024 Analysis Date: 11/8/2	0 10:07:09 PM
enzene 19.45 µg/L 1.0 20 0 97.2 84.6 109	1
oluene 19.15 µg/L 1.0 20 0 95.8 81 114	

Qualifiers:

F

Estimated value

Analyte detected below quantitation limits

Not Detected at the Reporting Limit

- H Holding times for preparation or analysis exceeded
- NC Non-Chlorinated
- R RPD outside accepted recovery limits

Page 1

Sa	mple Receipt C	Checklist		
ilient Name BLAGG	1 	Date Recei	ved:	11/2/2010
Vork Order Number 1011106		Received	by: MMG	
Checklist completed by:	11 2 Date	Sample ID) labels checked by:	Initials
Matrix: Carrier n	name: <u>Priority US</u>	<u>Mail</u>		
hipping container/cooler in good condition?	Yes 🗹	No 🗖	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🗹	No 🗌	Not Present	Not Shipped
custody seals intact on sample bottles?	Yes 🗌	No 🗀	N/A 🛛 🗹	
hain of custody present?	Yes 🗹	No 🗔		
hain of custody signed when relinquished and received?	Yes 🗹	No 🗆		
hain of custody agrees with sample labels?	Yes 🗹	No 🗔		
amples in proper container/bottle?	Yes 🗹	No 🗖		•
ample containers intact?	Yes 🗹	No 🗔		· .
ufficient sample volume for indicated test?	Yes 🗹	No 🗌		
Il samples received within holding time?	Yes 🗹	No 🗌		Number of preserve
Vater - VOA vials have zero headspace? No VOA vials	s submitted	Yes 🗹	No 🗔	bottles checked for pH:
ater - Preservation labels on bottle and cap match?	Yes 🗌	No 🗔	N/A 🗹	· .
/ater - pH acceptable upon receipt?	Yes 🗌	No 🗆	N/A 🗹	<2 >12 unless noted
ontainer/Temp Blank temperature?	0.8°	<6° C Accepta If given sufficie	able Int time to cool.	Delow.
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