

Daily Analysis Runlog For Sequence/QC Batch ID # LB88269

Review By		Review On				
SubDirectory		LB88269		Test : Cyanide		
STD. NAME		STD REF.#				
ICAL Standard		WP55830,WP55829,WP55828,WP55827,WP55826,WP55825				
ICV Standard		WP55831				
CCV Standard		WP55832				
ICSA Standard		N/A				
CRI Standard		N/A				
LCS Standard		N/A				
Chk Standard		WP55843,WP53945,WP55836				
Sr#	SampleId	ClientID	QcType	Date	Comment	Status
1	S0.0	S0.0	CAL1	06/21/17 13:40		OK
2	S5.0	S5.0	CAL2	06/21/17 13:40		OK
3	S10.0	S10.0	CAL3	06/21/17 13:40		OK
4	S100.0	S100.0	CAL4	06/21/17 13:40		OK
5	S250.0	S250.0	CAL5	06/21/17 13:40		OK
6	S500.0	S500.0	CAL6	06/21/17 13:40		OK
7	ICV	ICV	ICV	06/21/17 14:56		OK
8	ICB	ICB	ICB	06/21/17 14:56		OK
9	CCV001	CCV001	CCV	06/21/17 14:56		OK
10	CCB001	CCB001	CCB	06/21/17 14:56		OK
11	PB99960BL	PBW005	MB	06/21/17 14:56		OK
12	I3669-02	MDADZ4	SAM	06/21/17 14:56		OK
13	I3669-03	MDADZ4D	DUP	06/21/17 14:56		OK
14	I3669-04	MDADZ4S	MS	06/21/17 14:56		OK
15	I3669-05	MDADZ5	SAM	06/21/17 15:04		OK
16	I3669-06	MDADZ6	SAM	06/21/17 15:04		OK
17	I3669-07	MDADZ7	SAM	06/21/17 15:04		OK
18	I3669-08	MDAE07	SAM	06/21/17 15:04		OK
19	I3669-09	MDAE54	SAM	06/21/17 15:04		OK
20	I3669-10	MDADY4	SAM	06/21/17 15:04		OK
21	PB100009BL	PBS006	MB	06/21/17 15:04		OK

Daily Analysis Runlog For Sequence/QC Batch ID # LB88269

Review By		Review On				
SubDirectory		LB88269		Test : Cyanide		
STD. NAME		STD REF.#				
ICAL Standard		WP55830,WP55829,WP55828,WP55827,WP55826,WP55825				
ICV Standard		WP55831				
CCV Standard		WP55832				
ICSA Standard		N/A				
CRI Standard		N/A				
LCS Standard		N/A				
Chk Standard		WP55843,WP53945,WP55836				
22	I3677-01	MDAE00	SAM	06/21/17 15:04		OK
23	I3677-02	MDAE00D	DUP	06/21/17 15:04		OK
24	I3677-03	MDAE00S	MS	06/21/17 15:04		OK
25	I3677-04	MDAE01	SAM	06/21/17 15:11		OK
26	I3677-05	MDAE02	SAM	06/21/17 15:11		OK
27	I3677-06	MDAE03	SAM	06/21/17 15:11		OK
28	I3677-07	MDAE51	SAM	06/21/17 15:11		OK
29	I3677-11	MDADZ2	SAM	06/21/17 15:12		OK
30	I3677-10	MDADZ1	SAM	06/21/17 15:16		OK
31	CCV002	CCV002	CCV	06/21/17 15:16		OK
32	CCB002	CCB002	CCB	06/21/17 15:16		OK



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Report of Analysis

Client:		Date Collected:	6/12/2017 12:00:00 AM
Project:	LB88269	Date Received:	6/13/2017 12:00:00 AM
Client Sample ID:	MDADZ4	SDG No.:	LB88269
Lab Sample ID:	I3669-02	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	1.5	5	10	ug/L	06/21/2017	06/21/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	6/12/2017 12:00:00 AM
Project:	LB88269	Date Received:	6/13/2017 12:00:00 AM
Client Sample ID:	MDADZ5	SDG No.:	LB88269
Lab Sample ID:	I3669-05	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	1.5	5	10	ug/L	06/21/2017	06/21/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	6/12/2017 12:00:00 AM
Project:	LB88269	Date Received:	6/13/2017 12:00:00 AM
Client Sample ID:	MDADZ6	SDG No.:	LB88269
Lab Sample ID:	I3669-06	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	1.5	5	10	ug/L	06/21/2017	06/21/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	6/12/2017 12:00:00 AM
Project:	LB88269	Date Received:	6/13/2017 12:00:00 AM
Client Sample ID:	MDADZ7	SDG No.:	LB88269
Lab Sample ID:	I3669-07	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	1.5	5	10	ug/L	06/21/2017	06/21/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	6/12/2017 12:00:00 AM
Project:	LB88269	Date Received:	6/13/2017 12:00:00 AM
Client Sample ID:	MDAE07	SDG No.:	LB88269
Lab Sample ID:	I3669-08	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	1.5	5	10	ug/L	06/21/2017	06/21/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	6/12/2017 12:00:00 AM
Project:	LB88269	Date Received:	6/13/2017 12:00:00 AM
Client Sample ID:	MDAE54	SDG No.:	LB88269
Lab Sample ID:	I3669-09	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	2.1	J	1	1.5	5	10	ug/L	06/21/2017	06/21/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	6/13/2017 12:00:00 AM
Project:	LB88269	Date Received:	6/14/2017 12:00:00 AM
Client Sample ID:	MDADY4	SDG No.:	LB88269
Lab Sample ID:	I3669-10	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	73.2		1	1.5	5	10	ug/L	06/21/2017	06/21/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	6/13/2017 12:00:00 AM
Project:	LB88269	Date Received:	6/14/2017 12:00:00 AM
Client Sample ID:	MDAE00	SDG No.:	LB88269
Lab Sample ID:	I3677-01	Matrix:	Solid
Level (low/med):	low	% Solid:	82.3

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.23	J	1	0.065	0.015	0.59	mg/kg	06/21/2017	06/21/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	6/13/2017 12:00:00 AM
Project:	LB88269	Date Received:	6/14/2017 12:00:00 AM
Client Sample ID:	MDAE01	SDG No.:	LB88269
Lab Sample ID:	I3677-04	Matrix:	Solid
Level (low/med):	low	% Solid:	45.6

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	0.12	0.026	1.1	mg/kg	06/21/2017	06/21/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	6/13/2017 12:00:00 AM
Project:	LB88269	Date Received:	6/14/2017 12:00:00 AM
Client Sample ID:	MDAE02	SDG No.:	LB88269
Lab Sample ID:	I3677-05	Matrix:	Solid
Level (low/med):	low	% Solid:	83.3

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.52	J	1	0.063	0.014	0.58	mg/kg	06/21/2017	06/21/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	6/13/2017 12:00:00 AM
Project:	LB88269	Date Received:	6/14/2017 12:00:00 AM
Client Sample ID:	MDAE03	SDG No.:	LB88269
Lab Sample ID:	I3677-06	Matrix:	Solid
Level (low/med):	low	% Solid:	76.9

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	0.068	0.015	0.62	mg/kg	06/21/2017	06/21/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	6/13/2017 12:00:00 AM
Project:	LB88269	Date Received:	6/14/2017 12:00:00 AM
Client Sample ID:	MDAE51	SDG No.:	LB88269
Lab Sample ID:	I3677-07	Matrix:	Solid
Level (low/med):	low	% Solid:	45.2

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.028	U	1	0.12	0.027	1.1	mg/kg	06/21/2017	06/21/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	6/13/2017 12:00:00 AM
Project:	LB88269	Date Received:	6/14/2017 12:00:00 AM
Client Sample ID:	MDADZ1	SDG No.:	LB88269
Lab Sample ID:	I3677-10	Matrix:	Solid
Level (low/med):	low	% Solid:	100

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	2.0		1	0.053	0.012	0.49	mg/kg	06/21/2017	06/21/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	6/13/2017 12:00:00 AM
Project:	LB88269	Date Received:	6/14/2017 12:00:00 AM
Client Sample ID:	MDADZ2	SDG No.:	LB88269
Lab Sample ID:	I3677-11	Matrix:	Solid
Level (low/med):	low	% Solid:	100

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	5.1		1	0.052	0.012	0.48	mg/kg	06/21/2017	06/21/2017	ISM02.4_CN



Report of Analysis

Client:		Date Collected:	6/13/2017 12:00:00 AM
Project:	LB88269	Date Received:	6/14/2017 12:00:00 AM
Client Sample ID:	MDADZ2	SDG No.:	LB88269
Lab Sample ID:	I3677-11	Matrix:	Solid
Level (low/med):	low	% Solid:	100

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
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Color Before:

Clarity Before:

Texture:

Color After:

Clarity After:

Artifacts:

Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N = Spiked sample recovery not within control limits



Metals
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SAMPLE PREPARATION SUMMARY

Client: LB88269 SDG No.: LB88269
Contract: Lab Code: CHEM Method:
Case No.: LB88269 SAS No.: LB88269

					Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Sample ID	Client ID	Sample Type	Matrix	Prep Date			
Batch Number: PB100009							
PB100009BL	PBS006	MB	SOLID	06/21/2017	1.02	50.0	100.00
I3677-01	MDAE00	SAM	SOLID	06/21/2017	1.03	50.0	82.30
I3677-02	MDAE00D	DUP	SOLID	06/21/2017	1.04	50.0	82.30
I3677-03	MDAE00S	MS	SOLID	06/21/2017	1.05	50.0	82.30
I3677-04	MDAE01	SAM	SOLID	06/21/2017	1.04	50.0	45.60
I3677-05	MDAE02	SAM	SOLID	06/21/2017	1.04	50.0	83.30
I3677-06	MDAE03	SAM	SOLID	06/21/2017	1.05	50.0	76.90
I3677-07	MDAE51	SAM	SOLID	06/21/2017	1.04	50.0	45.20
I3677-11	MDADZ2	SAM	SOLID	06/21/2017	1.05	50.0	100.00
I3677-10	MDADZ1	SAM	SOLID	06/21/2017	1.03	50.0	100.00



Metals
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SAMPLE PREPARATION SUMMARY

Client: LB88269 SDG No.: LB88269
Contract: Lab Code: CHEM Method:
Case No.: LB88269 SAS No.: LB88269

					Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Sample ID	Client ID	Sample Type	Matrix	Prep Date			
Batch Number: PB99960							
PB99960BL	PBW005	MB	WATER	06/21/2017	50.0	50.0	
I3669-02	MDADZ4	SAM	WATER	06/21/2017	50.0	50.0	
I3669-03	MDADZ4D	DUP	WATER	06/21/2017	50.0	50.0	
I3669-04	MDADZ4S	MS	WATER	06/21/2017	50.0	50.0	
I3669-05	MDADZ5	SAM	WATER	06/21/2017	50.0	50.0	
I3669-06	MDADZ6	SAM	WATER	06/21/2017	50.0	50.0	
I3669-07	MDADZ7	SAM	WATER	06/21/2017	50.0	50.0	
I3669-08	MDAE07	SAM	WATER	06/21/2017	50.0	50.0	
I3669-09	MDAE54	SAM	WATER	06/21/2017	50.0	50.0	
I3669-10	MDADY4	SAM	WATER	06/21/2017	50.0	50.0	

FORM 15-IN
INITIAL CALIBRATION

Lab Name: LB88269 Contract: _____
Lab Code: CHEM Case No.: LB88269 MA No.: _____ SDG No.: LB88269
Instrument ID: CN Start Date: 06/21/2017
Analytical Method: _____ Run Batch: LB88269.mdb
Concentration Units: ug/L

Analyte	True	Found	%D	True	Found	%D	True	Found	%D
Cyanide	0	0	0	5	3.8	-24	10	9.1	-9

FORM 15-IN
INITIAL CALIBRATION

Lab Name: LB88269 Contract: _____
Lab Code: CHEM Case No.: LB88269 MA No.: _____ SDG No.: LB88269
Instrument ID: CN Start Date: 06/21/2017
Analytical Method: _____ Run Batch: LB88269.mdb
Concentration Units: ug/L

Analyte	True	Found	%D	True	Found	%D	True	Found	%D
Cyanide	100	102	2	250	253	1	500	498	0

Sample ID	Analyte	Result	True Value	% Recovery	% RSD	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
		ug/L								
ICV	Cyanide	97.2	99	98	0	85 - 115	CN	06/21/2017	14:56	LB88269



Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: LB88269

SDG No.: LB88269

Contract: _____ Lab Code: CHEM

Case No.: LB88269

SAS No.: LB88269

Initial Calibration Source: _____

Continuing Calibration Source: _____

Sample ID	Analyte	Result ug/L	True Value	% Recovery	% RSD	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV001	Cyanide	243	250	97	0	85 - 115	CN	06/21/2017	14:56	LB88269
CCV002	Cyanide	249	250	100	0	85 - 115	CN	06/21/2017	15:16	LB88269



Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: LB88269 **SDG No.:** LB88269
Contract: **Lab Code:** CHEM **Case No.:** LB88269 **SAS No.:** LB88269

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB	Cyanide	0.68	+/-10.0	U	5.0	10.0	CN	06/21/2017	14:56	LB88269



Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: LB88269 **SDG No.:** LB88269
Contract: **Lab Code:** CHEM **Case No.:** LB88269 **SAS No.:** LB88269

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB001	Cyanide	1.5	+/-10.0	U	5.0	10.0	CN	06/21/2017	14:56	LB88269
CCB002	Cyanide	1.5	+/-10.0	U	5.0	10.0	CN	06/21/2017	15:16	LB88269



Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: LB88269

SDG No.: LB88269

Contract: Lab Code: CHEM

Case No.: LB88269

SAS No.: LB88269

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
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Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: LB88269

SDG No.: LB88269

Instrument: CN

Sample ID	Analyte	Result (mg/kg)	Acceptance Limit	Conc Qual	LOD mg/kg	CRQL mg/kg	M	Analysis Date	Analysis Time	Run
PB100009BL	SOLID		Batch Number:		PB100009		Prep Date:		06/21/2017	
	Cyanide	0.054	<0.49	U	0.012	0.49	CN	06/21/2017	15:04	LB88269
Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	LOD ug/L	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB99960BL	WATER		Batch Number:		PB99960		Prep Date:		06/21/2017	
	Cyanide	1.5	<10	U	5.0	10	CN	06/21/2017	14:56	LB88269



metals
- 5a -
MATRIX SPIKE SUMMARY

client: LB88269 level: low sdg no.: LB88269
contract: lab code: CHEM case no.: LB88269 sas no.: LB88269
matrix: WATER sample id: I3669-02 client id: MDADZ4S
Percent Solids for Sample: 0 Spiked ID: I3669-04 Percent Solids for Spike Sample: 0

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Cyanide	ug/L	75 - 125	92.6		10.0	U	100	93		CN



metals
- 5a -
MATRIX SPIKE SUMMARY

client: LB88269 level: low sdg no.: LB88269
contract: lab code: CHEM case no.: LB88269 sas no.: LB88269
matrix: Solid sample id: I3677-01 client id: MDAE00S
Percent Solids for Sample: 82.3 Spiked ID: I3677-03 Percent Solids for Spike Sample: 82.3

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Cyanide	mg/kg	75 - 125	5.4		0.23	J	5.8	89		CN



Metals

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DUPLICATE SAMPLE SUMMARY

Client: LB88269 Level: LOW SDG No.: LB88269
Contract: Lab Code: CHEM Case No.: LB88269 SAS No.: LB88269
Matrix: WATER Sample ID: I3669-02 Client ID: MDADZ4D
Percent Solids for Sample: 0 Duplicate ID I3669-03 Percent Solids for Spike Sample: 0

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Cyanide	ug/L	20	10.0	U		0	U		CN

“A control limit of $\pm 20\%$ RPD for each matrix applies for sample values greater than 10 times Detection Limit”

Metals

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DUPLICATE SAMPLE SUMMARY

Client: LB88269 **Level:** LOW **SDG No.:** LB88269
Contract: **Lab Code:** CHEM **Case No.:** LB88269 **SAS No.:** LB88269
Matrix: Solid **Sample ID:** I3677-01 **Client ID:** MDAE00D
Percent Solids for Sample: 82.3 **Duplicate ID** I3677-02 **Percent Solids for Spike Sample:** 82.3

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Cyanide	mg/kg	20	0.23	J	0.25	J	8		CN