APPENDIX A

RAW FIELD DATA SHEETS

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UND ENERGY RESEARCH CENTER
COAL ANALYSIS REPORT

GF NUMBER: 99-0513 LAB NUMBER: 4736

DATE SAMPLED : 11/02/99 RUN NUMBER: VAL-D2-1A
DATE RECEIVED : 11/08/99
DATE OF REPORT: 11/10/99

SAMPLE DESCRIPTION: COMPOSITE COAL SAMPLE

SUBMITTER: R.SCHULZ

AIR DRY LOSS: 5.22 %

	AS DET. (%)	AS RECD. (%)	MOIST FREE (%)	MOIST/ASH FREE (%)
PROXIMATE ANALYSIS				
MOISTURE	11.50	16.10	N/A	N/A
VOLATILE MATTER	37.53	35.57	42.41	46.10
FIXED CARBON (IND)	43.89	41.62	49.59	53.90
ASH	7.08	6.71	8.00	N/A
ULTIMATE ANALYSIS				
HYDROGEN	5.36	5.66	4.61	5.01
CARBON	61.52	58.31	69.51	75.55
NITROGEN	1.96	1.85	2.21	2.40
SULFUR	0.26	0.25	0.29	0.32
OXYGEN (IND)	23.83	27.22	15.38	16.72
ASH	7.08	6.71	8.00	N/A
HEATING VALUE (BTU/LB)				
BTU	10885	10317	12299	13369
CALC. CALORIFIC VALUE	10697	10138		

AS RECEIVED HYDROGEN NOT INCLUDING HYDROGEN FROM MOISTURE: 3.87 %
AS RECEIVED OXYGEN NOT INCLUDING OXYGEN FROM MOISTURE : 12.90 %

SULFUR FORMS

SULFATE	N/A
PYRITIC	N/A
ORGANIC	N/A

ASH FUSION (DEGREES F)

INIT. DEFORM. TEMP.	N/A
SOFTENING TEMP.	N/A
HEMISPH. TEMP.	N/A
FLUID TEMP.	N/A

COMMENTS :

UND ENERGY RESEARCH CENTER
COAL ANALYSIS REPORT

GF NUMBER: 99-0515 LAB NUMBER: 4738

DATE SAMPLED : 11/03/99 RUN NUMBER: VAL-D3-2A
DATE RECEIVED : 11/08/99
DATE OF REPORT: 11/10/99

SAMPLE DESCRIPTION: COMPOSITE COAL SAMPLE

SUBMITTER: R.SCHULZ

AIR DRY LOSS: 5.48 %

	AS DET. (%)	AS RECD. (%)	MOIST FREE (%)	MOIST/ASH FREE (%)
PROXIMATE ANALYSIS				
MOISTURE	6.96	12.10	N/A	N/A
VOLATILE MATTER	39.64	37.47	42.61	46.70
FIXED CARBON (IND)	45.25	42.72	48.63	53.30
ASH	8.15	7.70	8.76	N/A
ULTIMATE ANALYSIS				
HYDROGEN	5.20	5.53	4.76	5.22
CARBON	65.11	61.54	69.98	76.70
NITROGEN	2.08	1.97	2.24	2.46
SULFUR	0.46	0.43	0.49	0.54
OXYGEN (IND)	18.99	22.83	13.77	15.09
ASH	8.15	7.70	8.76	N/A
HEATING VALUE (BTU/LB)				
BTU	10799	10207	11607	12721
CALC.CALORIFIC VALUE	11376	10753		

AS RECEIVED HYDROGEN NOT INCLUDING HYDROGEN FROM MOISTURE: 4.19 %
AS RECEIVED OXYGEN NOT INCLUDING OXYGEN FROM MOISTURE : 12.11 %

SULFUR FORMS

SULFATE	N/A
PYRITIC	N/A
ORGANIC	N/A

ASH FUSION (DEGREES F)

INIT. DEFORM. TEMP.	N/A
SOFTENING TEMP.	N/A
HEMISPH. TEMP.	N/A
FLUID TEMP.	N/A

COMMENTS

Final Results

November 16, 1999

Set Number: 49913
Fund#: 4892
PI: Dennis Laudal
Contact Person: Richard Schulz

Request Date: Wednesday, November 10, 1999
Due Date: Wednesday, November 24, 1999
Set Description: Valmont ICR Coals

Sample **49913-01**

49913-01	**VAL-D2-1A**	**Composite Coal**	
Chloride		< 50	µg/g
Mercury		0.010	µg/g
49913-02	**VAL-D2-2A**	**Composite Coal**	
Chloride		66	µg/g
Mercury		0.0055	µg/g
49913-03	**VAL-D3-2A**	**Composite Coal**	
Chloride		< 50	µg/g
Mercury		0.0083	µg/g

Distribution 35 Date 11-16-99

Date_____ Time_____
VAL-D2-in-OH-1

DATE: 11-2-99 START TIME: 11:27

RUN NUMBER: _____

SAMPLING SUMMARY

TOTAL SAMPLING TIME 120 MINUTES

MAXIMUM SYSTEM VACUUM 13.3 in Hg

AVERAGE STACK TEMPERATURE 288.06 °F

AVERAGE VELOCITY HEAD ΔP 0.293 in H_2O

AVERAGE STACK VELOCITY 39.36 FT/SEC

AVERAGE ORRIFICE PERSSURE ΔH 1.098 in H_2O

TOTAL VOLUME SAMPLED 67.040 FT^3

AVERAGE DGM INLET 103.55 °F

AVERAGE DGM OUTLET 98.45 °F

AVERAGE DGM TEMPERATURE 101.00 °F

FILTER TEMPERATURE NA °F

LAST IMPINGER TEMPERATURE 56.58 °F

METER PRESSURE Pm 25.058 in Hg

STACK PRESSURE Ps 24.44 in Hg

AREA OF NOZZLE 0.0539 IN^2

AVG SQRT ΔP 0.537

MOLECULAR WEIGHT 29.38

MOISTURE CONTENT 0.09

VmSTD = 52.732 SCF

% ISOKINETIC 94.74

Date_____ Time_____
VAL-D2-in-OH-2

DATE 11-2-99
RUN #_____
FUND #_____
COST CENTER NUMBER _____

DUST LOADING DATA SHEET

Time at Start 14:45 Operators Jeff T., Steve E.

Sample Pt. A, C, E, G Traverse Pt. 1-3

P_B(Barometric Pressure)= 24.98 in. Hg

P_s(Stack Pressure)= P_B ±(_____ in H_2O/13.6) = _____ in Hg

T_s(Stack Temp)= _____ °F+460= _____ °R

ΔP(Pitot)=_____ in H_2O _____Type S Cp=.84 _____Standard

D_n(Nozzle Diam)= 0.230 in Approx % H_2O= 9%

ΔH@=_____ in H_2O Cm= 1.00

V_s(Stack Velocity) = $951.6\ Cp \sqrt{\frac{Ts}{Ps}\Delta P}$ = _____ ft/min

Q_n(Nozzle flow Rate)= $V_s \pi D_n^2/576$=_____ACFM

Q_m(meter flow rate $\frac{Q_n T_m Q_n}{C_m T_s (P_B + \Delta H/13.6)}$ $(1 - \frac{\%H_2O}{100})$=_____ACFM

ΔH(orifice)= $\frac{Qm^2 \Delta H@(P_B+\Delta H/13.6)}{0.03175 T_m}$ = _____ in H_2O

Second/Rev=____ %CO_2____ %O_2____

Note: Standard Temperature and Pressure are 70 °F and 29.92 in Hg

S/R	Trav. Point	Time	Gas Meter	ΔP	ΔH	Pump Vac.	Stack Temp.	Probe Temp.	Meter In	Meter Out	O_2	CO_2	
	Pretest cal. on air										20.9	—	
	A_2										5.3	14.2	
	C_2										5.3	14.2	
	E_2										5.3	14.2	
	G_2										5.4	14.1	

Comments: SOT leak ✓ passed
MOT " ✓ passed
EOT " ✓ passed

Sample Pt. _____

Train Type : **ONTARIO-HYDRO METHOD**

Date _____ Date _____ Time _____

Run VAL-D2-in-OH-2

Fund # _____

Cost Center # _____

Stopper Type	Type Of Solution	Initial Wt. (g)	Final Wt. (g)	Net Wt. (g)
BUBBLER	KCl	728.5	836.3	107.8
BUBBLER	KCl	716.5	727.6	11.1
IMPINGER	KCl	722.6	723.1	0.5
BUBBLER	H_2O_2/HNO_3	723.3	725.2	1.9
BUBBLER	$KMnO_4/H_2SO_4$	729.0	728.8	-0.2
BUBBLER	$KMnO_4/H_2SO_4$	620.3	621.5	1.2
IMPINGER	$KMnO_4/H_2SO_4$	735.0	734.8	-0.2
BUBBLER	SILICA GEL	985.5	994.6	9.1
	50mL Rinse		Total H_2O (g)	-50.0 81.2
FILTER #5		3.02839	8.66175	5.63336
			Total Dust (g)	5.63336

$V_w std = 0.0474 * (H_2O\ g)$ _____ SCF

$V_m Corrected = V_m * C_m$ _____ ACF

$V_m std = \frac{17.71\ V_m C\ (P_b + \Delta H/13.6)}{T_m}$ _____ SCF

$V_t std = V_w std + V_m std$ _____ SCF

$\%H_2O = (V_w std / V_t std) * 100$ _____ $\%H_2O$

$Q_n std = 17.71\ Q_a\ P_s / T_s$ _____ SCFM

% Isokinetic = $V_t std / (Q_n std * Time)$ _____ %

DUST LOADING CALCULATIONS (Concentration Basis)

DCL = 15.432 (dust g) / $V_t std$ _____ grains/scf

$\%\ Efficiency = \frac{(Inlet\ DCL - Outlet\ DCL)}{Inlet\ DCL} * 100$ _____ %

ACFM = V_t * Pipe Area (ft^2) _____ ACFM

SCFM = ACFM * $P_s/29.92 * 530/T_s$ = ACFM * $P_s/T_s * 17.71$ _____ SCFM

lbs/hour = grams / scf * 0.000143 * SCFM * 60 _____ lbs/hour

DATE: 11-3-98 START TIME: 1450

RUN NUMBER: _____

SAMPLING SUMMARY

TOTAL SAMPLING TIME 120.0 MINUTES

MAXIMUM SYSTEM VACUUM 12.3 in Hg

AVERAGE STACK TEMPERATURE 312.41 °F

AVERAGE VELOCITY HEAD ΔP 0.273 in H_2O

AVERAGE STACK VELOCITY 38.79 FT/SEC

AVERAGE ORRIFICE PERSSURE ΔH 1.200 in H_2O

TOTAL VOLUME SAMPLED 66.964 FT^3

AVERAGE DGM INLET 105.12 °F

AVERAGE DGM OUTLET 99.85 °F

AVERAGE DGM TEMPERATURE 102.49 °F

FILTER TEMPERATURE NA °F

LAST IMPINGER TEMPERATURE 46.94 °F

METER PRESSURE Pm 24.958 in Hg

STACK PRESSURE Ps 24.35 in Hg

AREA OF NOZZLE 0.0539 IN^2

AVG SQRT ΔP 0.520

MOLECULAR WEIGHT 29.38

MOISTURE CONTENT 9%

VmSTD = 52.336 SCF

% ISOKINETIC 98.88

Date_____ Time_____
VAL-D2-ST-OH-1

DATE 11-2-99
RUN #_____
FUND #_____
COST CENTER NUMBER _____

DUST LOADING DATA SHEET

Time at Start 11:25 Operators B. Schulz M. Heidt

Sample Pt. Stack Traverse Pt. 103"-63"-36"

P_B(Barometric Pressure)= 25.19 in. Hg

P_s(Stack Pressure)= $P_B \pm$(_____ in $H_2O/13.6$) = _____ in Hg

T_s(Stack Temp)= _____ °F+460= _____ °R

ΔP(Pitot)= _____ in H_2O .84 Type S Cp=.84 _____ Standard

D_n(Nozzle Diam)= .254 in Approx % H_2O= 9

ΔH@=2.575 in H_2O Cm= 1.00

V_s(Stack Velocity) = $951.6\ Cp \sqrt{\frac{Ts}{Ps}\Delta P}$ = _____ ft/min

Q_n(Nozzle flow Rate)= $V_s \pi D_n^2/576$= _____ ACFM

Q_m(meter flow rate $\frac{Q_n T_m Q_n}{C_m T_s (p_B + \Delta H/13.6)}$ (1 - $\frac{\%H_2O}{100}$)= _____ ACFM

ΔH(orifice)= $\frac{Qm^2 \Delta H@ (P_B + \Delta H/13.6)}{0.03175 T_m}$ = _____ in H_2O

Second/Rev=_____ $\%CO_2$_____ $\%O_2$_____

Note: Standard Temperature and Pressure are 70 °F and 29.92 in Hg

S/R	Trav. Point	Time	Gas Meter	ΔP	ΔH	Pump Vac.	Stack Temp.	Probe Temp.	Meter In	Meter Out	O_2	CO_2	

Comments: Pretest leak ✓ OK @ 5" Hg
Post-test leak ✓ OK @ 5" Hg

Sample Pt. _____

Train Type : **ONTARIO-HYDRO METHOD**

Date _____ Date _____ Time _____
Run VAL-D2-ST-OH-1
Fund # _____
Cost Center # _____

Stopper Type	Type Of Solution	Initial Wt. (g)	Final Wt. (g)	Net Wt. (g)
BUBBLER	KCl	704.4	764.1	59.7
BUBBLER	KCl	629.0	640.5	11.5
IMPINGER	KCl	736.6	737.6	1.0
BUBBLER	H_2O_2/HNO_3	743.4	744.3	0.9
BUBBLER	$KMnO_4/H_2SO_4$	713.7	713.6	-0.1
BUBBLER	$KMnO_4/H_2SO_4$	726.7	727.2	0.5
IMPINGER	$KMnO_4/H_2SO_4$	716.8	716.5	-0.3
BUBBLER	SILICA GEL	862.5	872.9	10.4
			Total H_2O (g)	
FILTER #3		~~3.08163~~ 3.08170	~~3.33101~~	Recalibrate Ba
			3.09045	
			Total Dust (g)	

$V_w std = 0.0474 * (H_2O\ g)$ _____ SCF

$V_m Corrected = V_m * C_m$ _____ ACF

$V_m std = \frac{17.71\ V_m C\ (P_b + \Delta H/13.6)}{T_m}$ _____ SCF

$V_t std = V_w std + V_m std$ _____ SCF

$\%H_2O = (V_w std / V_t std) * 100$ _____ $\%H_2O$

$Q_n std = 17.71\ Q_n\ P_s / T_s$ _____ SCFM

$\%\ Isokinetic = V_t std / (Q_n std * Time)$ _____ %

DUST LOADING CALCULATIONS (Concentration Basis)

$DCL = 15.432\ (dust\ g) / V_t std$ _____ grains/scf

$\%\ Efficiency = \frac{(Inlet\ DCL - Outlet\ DCL)}{Inlet\ DCL} * 100$ _____ %

$ACFM = V_s * Pipe\ Area\ (ft^2)$ _____ ACFM

$SCFM = ACFM * P_s/29.92 * 530/T_s = ACFM * P_s/T_s * 17.71$ _____ SCFM

$lbs/hour = grains / scf * 0.000143 * SCFM * 60$ _____ lbs/hour

Date_____ Time_____
VAL-D2-ST-OH-2

DATE: _____ START TIME: 1445

RUN NUMBER: _____

SAMPLING SUMMARY

TOTAL SAMPLING TIME 120.0 MINUTES

MAXIMUM SYSTEM VACUUM 2.8 in Hg

AVERAGE STACK TEMPERATURE 280.6 °F

AVERAGE VELOCITY HEAD ΔP 0.218 in H_2O

AVERAGE STACK VELOCITY 31.67 FT/SEC

AVERAGE ORRIFICE PERSSURE ΔH 0.961 in H_2O

TOTAL VOLUME SAMPLED 51.932 FT^3

AVERAGE DGM INLET 79.2 °F

AVERAGE DGM OUTLET 77.5 °F

AVERAGE DGM TEMPERATURE 78.4 °F

FILTER TEMPERATURE NA °F

LAST IMPINGER TEMPERATURE 46.3 °F

METER PRESSURE Pm 24.839 in Hg

STACK PRESSURE Ps 24.56 in Hg

AREA OF NOZZLE 0.0507 IN^2

AVG SQRT ΔP 0.435

MOLECULAR WEIGHT 29.38

MOISTURE CONTENT 0.090

VmSTD = 42.346 SCF

% ISOKINETIC 99.10

Date_____ Time_____
VAL-D3-ST-OH-2

DATE 11/3/99
RUN #_____
FUND #_____
COST CENTER NUMBER _____

DUST LOADING DATA SHEET

Time at Start 1458 Operators R. Schulz Mattle

Sample Pt. Stack Traverse Pt. 36" 63" 103"

P_B(Barometric Pressure)= 24.92 KW in. Hg

P_s(Stack Pressure)= P_B ±(_____ in H_2O/13.6) = [ ] in Hg

T_s(Stack Temp)= _____ °F+460= [ ] °R

ΔP(Pitot)=_____ in H_2O 0.84 Type S Cp=.84 _____ Standard

D_n(Nozzle Diam)= 0.251 in Approx % H_2O= 9

ΔH@= 2.575 in H_2O Cm= 1.00

V_s(Stack Velocity) = $951.6\ Cp \sqrt{\frac{Ts\ \Delta P}{Ps}}$ = _____ ft/min

Q_n(Nozzle flow Rate)= $V_s \pi D_n^2/576$= _____ ACFM

Q_m(meter flow rate $\frac{Q_n T_m Qn}{CmT_s(p_B+\Delta H/13.6)}$ $(1 - \frac{\%H_2O}{100})$= _____ ACFM

ΔH(orifice)= $\frac{Qm^2 \Delta H@(P_B+\Delta H/13.6)}{0.03175 T_m}$ = _____ in H_2O

Second/Rev=_____ %CO_2_____ %O_2_____

Note: Standard Temperature and Pressure are 70 °F and 29.92 in Hg

S/R	Trav. Point	Time	Gas Meter	ΔP	ΔH	Pump Vac.	Stack Temp.	Probe Temp.	Meter In	Meter Out	O_2	CO_2	

Comments: Pre-test leak ✓ OK @ 5" Hg
Post-test leak ✓ OK @ 5" Hg

Sample Pt. _____

Date _____ Time _____

Date VAL-D3-ST-OH-2

Run _____

Fund # _____

Cost Center # _____

Train Type : **ONTARIO-HYDRO METHOD**

Stopper Type	Type Of Solution	Initial Wt. (g)	Final Wt. (g)	Net Wt. (g)
BUBBLER	KCl	686.7	730.8	44.1
BUBBLER	KCl	775.8	737.7	11.9
IMPINGER	KCl	709.2	710.4	1.2
BUBBLER	H_2O_2/HNO_3	766.7	768.0	1.3
BUBBLER	$KMnO_4/H_2SO_4$	713.9	713.6	-0.3
BUBBLER	$KMnO_4/H_2SO_4$	753.1	754.2	1.1
IMPINGER	$KMnO_4/H_2SO_4$	725.5	725.2	-0.3
BUBBLER	SILICA GEL	960.2	970.1	9.9
			Total H_2O (g)	68.9
FILTER	#10	3.14985	3.15463	0.00478
			Total Dust (g)	0.00478

$V_wstd = 0.0474 * (H_2O\ g)$ _____ SCF

$V_mCorrected = V_m * C_m$ _____ ACF

$V_mstd = \frac{17.71\ V_mC\ (P_b + \Delta H/13.6)}{T_m}$ _____ SCF

$V_tstd = V_wstd + V_mstd$ _____ SCF

$\%H_2O = (V_wstd / V_tstd) * 100$ _____ $\%H_2O$

$Q_nstd = 17.71\ Q_s\ P_s / T_s$ _____ SCFM

% Isokinetic = $V_tstd / (Q_sstd * Time)$ _____ %

DUST LOADING CALCULATIONS (Concentration Basis)

DCL = 15.432 (dust g) / V_tstd _____ grains/scf

% Efficiency = $\frac{(\text{Inlet DCL - Outlet DCL}) * 100}{\text{Inlet DCL}}$ _____ %

ACFM = V_s * Pipe Area (ft^2) _____ ACFM

SCFM = ACFM * $P_s/29.92 * 530/T_s$ = ACFM * P_s/T_s * 17.71 _____ SCFM

lbs/hour = grains / scf * 0.000143 * SCFM * 60 _____ lbs/hour

APPENDIX B

ANALYTICAL LAB REPORTS

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Valmont 11/03/99

Sample ID	Sample Type	Volume, mL	Hg, µg/L	
KCl Reagent Blank	KCl	300	<0.03	
H_2O_2 Reagent Blank	H_2O_2–HNO_3	100	<0.03	
$KMnO_4$ Reagent Blank	$KMnO_4$–H_2SO_4	300	<0.03	
0.1 N HNO_3 Blank	0.1 N HNO_3	100	<0.03	
10% Hydroxylamine HCl	10% Hyd. amine	100	<0.03	
VAL-D2-IN-OH-1	Nozzle rinse	250	<0.03	<0.03
VAL-D2-IN-OH-1	KCl Nos. 1 and 2	500	0.292, 0.297, 0.295	
VAL-D2-IN-OH-1	KCl No. 3	250	<0.03	<0.03
VAL-D2-IN-OH-1	H_2O_2	250	<0.03, <0.03, <0.03	
VAL-D2-IN-OH-1	$KMnO_4$	500	0.480, 0.479, 0.468	
VAL-D2-IN-OH-2	Nozzle rinse	250	<0.03	<0.03
VAL-D2-IN-OH-2	KCl Nos. 1 and 2	500	0.131	0.134
VAL-D2-IN-OH-2	KCl No. 3	250	<0.03	<0.03
VAL-D2-IN-OH-2	H_2O_2	250	<0.03	<0.03
VAL-D2-IN-OH-2	$KMnO_4$	500	0.270	0.271
VAL-D2-ST-OH-1	Nozzle rinse	250	<0.03	<0.03
VAL-D2-ST-OH-1	KCl Nos. 1 and 2	500	0.260	0.264
VAL-D2-ST-OH-1	KCl No. 3	250	<0.03	<0.03
VAL-D2-ST-OH-1	H_2O_2	250	<0.03	<0.03
VAL-D2-ST-OH-1	$KMnO_4$	500	0.074	0.069
VAL-D2-ST-OH-2	Nozzle rinse	250	<0.03	<0.03
VAL-D2-ST-OH-2	KCl Nos. 1 and 2	500	0.198	0.190
VAL-D2-ST-OH-2	KCl No. 3	250	<0.03	<0.03
VAL-D2-ST-OH-2	H_2O_2	250	<0.03	<0.03
VAL-D2-ST-OH-2	$KMnO_4$	500	0.031	0.032
VAL-D2-FB-IN	KCl	500	<0.03	<0.03
VAL-D2-FB-IN	H_2O_2	250	<0.03	<0.03
VAL-D2-FB-IN	$KMnO_4$	500	<0.03	<0.03
VAL-D2-FB-OUT	KCl	500	<0.03	<0.03
VAL-D2-FB-OUT	H_2O_2	250	<0.03	<0.03
VAL-D2-FB-OUT	$KMnO_4$	500	<0.03	<0.03

Valmont 11/04/99

Sample ID	Sample Type	Volume, mL	Hg, µg/L	
VAL-D3-FB-IN	KCl	500	<0.03	<0.03
VAL-D3-FB-IN	H_2O_2	250	<0.03	<0.03
VAL-D3-FB-IN	$KMnO_4$	500	<0.03	<0.03
VAL-D3-FB-OUT	KCl	500	<0.03	<0.03
VAL-D3-FB-OUT	H_2O_2	250	<0.03	<0.03
VAL-D3-FB-OUT	$KMnO_4$	500	<0.03	<0.03
VAL-D3-IN-OH-2	Nozzle rinse	250	<0.03	<0.03
VAL-D3-IN-OH-2	KCl	500	0.298	0.278
VAL-D3-IN-OH-2	H_2O_2	250	<0.03	<0.03
VAL-D3-IN-OH-2	$KMnO_4$	500	0.438	0.437
VAL-D3-ST-OH-2	Nozzle rinse	250	<0.03	<0.03
VAL-D3-ST-OH-2	KCl	500	0.396	0.390
VAL-D3-ST-OH-2	H_2O_2	250	<0.03	<0.03
VAL-D3-ST-OH-2	$KMnO_4$	500	0.069	0.068

12/21/99

Calibration Standards: 0.1, 0.5, 1.0, 2.0, 5.0 ppb R = 0.9999 QC = 0.384 (0.4)

Sample ID	Sample Type	Spike Amount	Sample Reading, µg/L	Spike Reading, µg/L	Spike Location	Spike Recovery, %
VAL-D2-IN-OH-1	KCl	0.5	0.295	0.778	Lab	96.6
VAL-D3-IN-OH-1	KCl	0.5	0.119	0.644	Lab	105.0
VAL-D2-IN-OH-1	H_2O_2	0.5	<0.03	0.43	Lab	86.0
VAL-D2-IN-OH-1	H_2O_2	1.0	<0.03	1.06	Lab	106.0
VAL-D3-IN-OH-1	H_2O_2	0.5	0.09	0.53	Lab	88.0
VAL-D3-IN-OH-1	H_2O_2	1.0	0.09	1.07	Lab	98.0
VAL-D2-IN-OH-1	$KMnO_4$	0.5	0.471	0.982	Lab	102.2
VAL-D3-IN-OH-1	$KMnO_4$	0.5	0.383	0.911	Lab	105.6