

From: Paul Vandenberg
To: Elaine Stewart
Date: 3/13/03 9:41AM
Subject: surface water tests

Elaine

I did a quick review of the lab results for the sample that Justin Rush collected. The results are fairly typical for the lakes and Slough, including the chloride, which was actually on the lower end of the range seen at other locations. Conductivity, which is a useful indicator of overall water quality, was also on the low (i.e., good) end of the typical range.

The only thing that seemed a little odd was the DO, which was below the range at other locations. However, most of these standard indicators should to be measured in the field (and with some frequency) to get a true representation of water quality in a given area. But still interesting and a good project in any case.

Let me know if you have any other questions.

Paul

Environmental Services Laboratory, Inc.



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February 03, 2003

JUSTIN RUSH
JUSTIN RUSH
9370 SW 146TH TERRACE #6
BEAVERTON, OREGON 97007

TEL: 503-590-3378

FAX 503-521-1121

RE: PAINTED TURTLE HABITAT

Order No.: 0301141

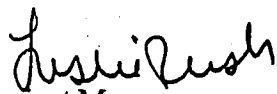
Dear JUSTIN RUSH:

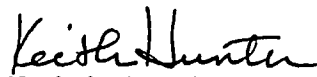
Environmental Services Laboratory received 1 sample on 1/20/03 for the analyses presented in the following report.

There were no analytical problems encountered and all associated QC data met EPA or laboratory specifications except where noted in a Case Narrative. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety, without the written approval of the laboratory. The following checked data sections are included in this report, and numbered to indicate total pages contained within each report section.

☒ Base Sample Report ☒ Method Blank Report ☒ Sample Duplicate Report ☒ Matrix Spike/Matrix Spike Duplicate Report ☒ Laboratory Control Spike/Spike Duplicate Report
☒ Continuing Calibration Verification Report ☒ Initial Calibration Verification Report

If you have any questions regarding these tests results, please feel free to call.


Project Manager


Technical Review

Environmental Services Laboratory

Date: 03-Feb-03

CLIENT: JUSTIN RUSH

Lab Order: 0301141

Project: PAINTED TURTLE HABITAT

Lab ID: 0301141-01A

Client Sample ID: PAINTED TURTLE HABITAT

Tag Number:

Collection Date: 1/20/03

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS		EPA 6010B		(3005A)		Analyst: mal
Hardness	69	0.33		mg/L	1	1/27/03
Lead	ND	0.0050		mg/L	1	1/27/03
ALKALINITY		EPA 310.1				Analyst: jca
Alkalinity, Total (As CaCO3)	80	5.0		mg/L CaCO3	1	1/29/03
AMMONIA AS N		EPA 350.3				Analyst: jca
Ammonia	0.31	0.10		mg/L	1	1/30/03
CHEMICAL OXYGEN DEMAND		EPA 410.4				Analyst: jca
Chemical Oxygen Demand	100	5.0		mg/L	1	1/31/03
CONDUCTANCE		EPA 120.1				Analyst: jca
Specific Conductance	136	2.00		µmhos/cm	1	1/22/03
DISSOLVED OXYGEN		EPA 360.1				Analyst: jca
Oxygen, Dissolved	4.6	1.0		mg/L	1	1/22/03
ANIONS BY ION CHROMATOGRAPHY		EPA 300.0				Analyst: jca
Chloride	2.56	0.250		mg/L	1	1/22/03 11:30:00 AM
Nitrate (NO3-N)	0.0330	0.0250		mg/L	1	1/22/03 11:30:00 AM
Nitrite (NO2-N)	ND	0.0250		mg/L	1	1/22/03 11:30:00 AM
Phosphate (P)	ND	0.0500		mg/L	1	1/22/03 11:30:00 AM
Sulfate	2.16	2.00		mg/L	1	1/22/03 11:30:00 AM
OIL AND GREASE		EPA 1664				Analyst: jca
HEM, Total	ND	5.0		mg/L	1	1/24/03
PH		EPA 150.1				Analyst: jca
pH	6.4	0		pH units	1	1/22/03 11:30:00 AM
PHOSPHORUS		EPA 365.3				Analyst: jca
Phosphorus, Total	0.43	0.025		mg/L	1	1/22/03
TOTAL DISSOLVED SOLIDS		EPA 160.1				Analyst: jca
Total Dissolved Solids (Residue, Filterable)	127	10.0		mg/L	1	1/27/03
TOTAL SUSPENDED SOLIDS		EPA 160.2				Analyst: jca
Suspended Solids (Residue, Non-Filterable)	71.0	5.00		mg/L	1	1/24/03
TURBIDITY		EPA 180.1				Analyst: jca
Turbidity	9.9	0.10		NTU	1	1/22/03

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range

CLIENT: JUSTIN RUSH
Work Order: 0301141
Project: PAINTED TURTLE HABITAT

ANALYTICAL QC SUMMARY REPORT

TestCode: 01 ALK A

Sample ID: MBLK	SampType: MBLK	TestCode: 01 ALK A	Units: mg/L CaCO3	Prep Date: 1/29/03	Run ID: NO INST_030129A						
Client ID: ZZZZZ	Batch ID: R12864	TestNo: EPA 310.1		Analysis Date: 1/29/03	SeqNo: 155371						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID: LCS	SampType: LCS	TestCode: 01 ALK A	Units: mg/L CaCO3	Prep Date: 1/29/03	Run ID: NO INST_030129A						
Client ID: ZZZZZ	Batch ID: R12864	TestNo: EPA 310.1		Analysis Date: 1/29/03	SeqNo: 155372						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	161	5.0	153	0	105	89	112	0	0		

Sample ID: 0301141-01A DUP	SampType: DUP	TestCode: 01 ALK A	Units: mg/L CaCO3	Prep Date: 1/29/03	Run ID: NO INST_030129A						
Client ID: PAINTED TURTLE H	Batch ID: R12864	TestNo: EPA 310.1		Analysis Date: 1/29/03	SeqNo: 155374						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	81.4	5.0	0	0	0	0	0	80.5	1.11	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: JUSTIN RUSH
Work Order: 0301141
Project: PAINTED TURTLE HABITAT

ANALYTICAL QC SUMMARY REPORT

TestCode: 01 AMMON A

Sample ID: MBLK	SampType: MBLK	TestCode: 01 AMMON A	Units: mg/L	Prep Date: 1/30/03	Run ID: NO INST_030130B						
Client ID: ZZZZ	Batch ID: R12888	TestNo: EPA 350.3		Analysis Date: 1/30/03	SeqNo: 155587						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Ammonia ND 0.10

Sample ID: LCS	SampType: LCS	TestCode: 01 AMMON A	Units: mg/L	Prep Date: 1/30/03	Run ID: NO INST_030130B						
Client ID: ZZZZZ	Batch ID: R12888	TestNo: EPA 350.3		Analysis Date: 1/30/03	SeqNo: 155588						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Ammonia 9.38 0.10 10 0 93.8 81.6 120 0 0

Sample ID: 0301141-01A MS	SampType: MS	TestCode: 01 AMMON A	Units: mg/L	Prep Date: 1/30/03	Run ID: NO INST_030130B						
Client ID: PAINTED TURTLE H	Batch ID: R12888	TestNo: EPA 350.3		Analysis Date: 1/30/03	SeqNo: 155591						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Ammonia 4.88 0.10 5 0.306 91.5 75 125 0 0

Sample ID: 0301141-01A MSD	SampType: MSD	TestCode: 01 AMMON A	Units: mg/L	Prep Date: 1/30/03	Run ID: NO INST_030130B						
Client ID: PAINTED TURTLE H	Batch ID: R12888	TestNo: EPA 350.3		Analysis Date: 1/30/03	SeqNo: 155592						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Ammonia 4.9 0.10 5 0.306 91.9 75 125 4.88 0.409 20

Sample ID: 0301141-01A DUP	SampType: DUP	TestCode: 01 AMMON A	Units: mg/L	Prep Date: 1/30/03	Run ID: NO INST_030130B						
Client ID: PAINTED TURTLE H	Batch ID: R12888	TestNo: EPA 350.3		Analysis Date: 1/30/03	SeqNo: 155590						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Ammonia 0.282 0.10 0 0 0 0 0 0.306 8.16 20

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B - Analyte detected in the associated Method Blank

CLIENT: JUSTIN RUSH
 Work Order: 0301141
 Project: PAINTED TURTLE HABITAT

ANALYTICAL QC SUMMARY REPORT

TestCode: 01 COD

Sample ID: MBLK	SampType: MBLK	TestCode: 01 COD	Units: mg/L	Prep Date: 1/31/03	Run ID: MILTON_030131A
Client ID: ZZZZZ	Batch ID: R12896	TestNo: EPA 410.4		Analysis Date: 1/31/03	SeqNo: 155678
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chemical Oxygen Demand

ND

5.0

Sample ID: LCS	SampType: LCS	TestCode: 01 COD	Units: mg/L	Prep Date: 1/31/03	Run ID: MILTON_030131A
Client ID: ZZZZZ	Batch ID: R12896	TestNo: EPA 410.4		Analysis Date: 1/31/03	SeqNo: 155679
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chemical Oxygen Demand

48

5.0

50

0

96

88

116

0

0

Sample ID: LCSD	SampType: LCSD	TestCode: 01 COD	Units: mg/L	Prep Date: 1/31/03	Run ID: MILTON_030131A
Client ID: ZZZZZ	Batch ID: R12896	TestNo: EPA 410.4		Analysis Date: 1/31/03	SeqNo: 155680
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chemical Oxygen Demand

49.1

5.0

50

0

98.2

88

116

48

2.27

20

Sample ID: 0301141-01A MS	SampType: MS	TestCode: 01 COD	Units: mg/L	Prep Date: 1/31/03	Run ID: MILTON_030131A
Client ID: PAINTED TURTLE H	Batch ID: R12896	TestNo: EPA 410.4		Analysis Date: 1/31/03	SeqNo: 155683
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chemical Oxygen Demand

85.1

5.0

35.2

103

98

75

125

0

0

Sample ID: 0301141-01A MSD	SampType: MSD	TestCode: 01 COD	Units: mg/L	Prep Date: 1/31/03	Run ID: MILTON_030131A
Client ID: PAINTED TURTLE H	Batch ID: R12896	TestNo: EPA 410.4		Analysis Date: 1/31/03	SeqNo: 155684
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chemical Oxygen Demand

82.4

5.0

35.2

103

95

75

125

85.1

3.22

20

Sample ID: 0301141-01A DUP	SampType: DUP	TestCode: 01 COD	Units: mg/L	Prep Date: 1/31/03	Run ID: MILTON_030131A
Client ID: PAINTED TURTLE H	Batch ID: R12896	TestNo: EPA 410.4		Analysis Date: 1/31/03	SeqNo: 155682
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: JUSTIN RUSH
Work Order: 0301141
Project: PAINTED TURTLE HABITAT

ANALYTICAL QC SUMMARY REPORT

TestCode: 01 COD

Sample ID: 0301141-01A DUP		SampType: DUP		TestCode: 01 COD		Units: mg/L		Prep Date: 1/31/03		Run ID: MILTON_030131A	
Client ID: PAINTED TURTLE H		Batch ID: R12896		TestNo: EPA 410.4		Analysis Date: 1/31/03		SeqNo: 155682			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	119	50	0	0	0	0	0	103	14.4	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: JUSTIN RUSH
Work Order: 0301141
Project: PAINTED TURTLE HABITAT

ANALYTICAL QC SUMMARY REPORT

TestCode: 01 COND

Sample ID: MBLK	SampType: MBLK	TestCode: 01 COND	Units: µmhos/cm	Prep Date: 1/22/03	Run ID: NO INST_030122B						
Client ID: ZZZZZ	Batch ID: R12808	TestNo: EPA 120.1		Analysis Date: 1/22/03	SeqNo: 154644						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Specific Conductance ND 2.00

Sample ID: LCS	SampType: LCS	TestCode: 01 COND	Units: µmhos/cm	Prep Date: 1/22/03	Run ID: NO INST_030122B						
Client ID: ZZZZZ	Batch ID: R12808	TestNo: EPA 120.1		Analysis Date: 1/22/03	SeqNo: 154645						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Specific Conductance 99.7 2.00 100 0 99.4 83.8 113 0 0

Sample ID: 0301141-01A DUP	SampType: DUP	TestCode: 01 COND	Units: µmhos/cm	Prep Date: 1/22/03	Run ID: NO INST_030122B						
Client ID: PAINTED TURTLE H	Batch ID: R12808	TestNo: EPA 120.1		Analysis Date: 1/22/03	SeqNo: 154647						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Specific Conductance 135 2.00 0 0 0 0 0 0 136 0.738 20

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: JUSTIN RUSH
Work Order: 0301141
Project: PAINTED TURTLE HABITAT

ANALYTICAL QC SUMMARY REPORT

TestCode: 01 DO

Sample ID: 0301141-01A DUP		SampType: DUP		TestCode: 01 DO		Units: mg/L		Prep Date: 1/22/03		Run ID: NO INST_030122A	
Client ID: PAINTED TURTLE H		Batch ID: R12806		TestNo: EPA 360.1		Analysis Date: 1/22/03		SeqNo: 154639			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oxygen, Dissolved	4.78	1.0	0	0	0	0	0	4.58	4.27	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: JUSTIN RUSH
 Work Order: 0301141
 Project: PAINTED TURTLE HABITAT

ANALYTICAL QC SUMMARY REPORT

TestCode: 01 IC ANIONS

Sample ID: MBLK	SampType: MBLK	TestCode: 01 IC ANIONS	Units: mg/L	Prep Date: 1/22/03	Run ID: CRANE_030122A						
Client ID: ZZZZZ	Batch ID: R12818	TestNo: EPA 300.0		Analysis Date: 1/22/03	SeqNo: 154771						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride	ND	0.250									
Nitrate (NO3-N)	ND	0.0250									
Nitrite (NO2-N)	ND	0.0250									
Phosphate (P)	ND	0.0500									
Sulfate	ND	2.00									

Sample ID: LCS	SampType: LCS	TestCode: 01 IC ANIONS	Units: mg/L	Prep Date: 1/22/03	Run ID: CRANE_030122A						
Client ID: ZZZZZ	Batch ID: R12818	TestNo: EPA 300.0		Analysis Date: 1/22/03	SeqNo: 154772						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride	0.833	0.250	0.8	0	104	85	115	0	0		
Nitrate (NO3-N)	2.06	0.0250	2	0	103	85	115	0	0		
Nitrite (NO2-N)	0.796	0.0250	0.8	0	99.5	85	115	0	0		
Phosphate (P)	0.765	0.0500	0.8	0	95.6	85	115	0	0		
Sulfate	9.26	2.00	10	0	92.6	85	115	0	0		

Sample ID: 0301141-01A MS	SampType: MS	TestCode: 01 IC ANIONS	Units: mg/L	Prep Date: 1/22/03	Run ID: CRANE_030122A						
Client ID: PAINTED TURTLE H	Batch ID: R12818	TestNo: EPA 300.0		Analysis Date: 1/22/03	SeqNo: 154775						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride	4.3	0.250	2	2.56	87	75	125	0	0		
Nitrate (NO3-N)	0.206	0.0250	0.2	0.033	86.5	75	125	0	0		
Nitrite (NO2-N)	0.15	0.0250	0.2	0	75	75	125	0	0		
Phosphate (P)	0.189	0.0500	0.2	0	94.5	75	125	0	0		
Sulfate	6.37	2.00	5	2.16	84.2	75	125	0	0		

Sample ID: 0301141-01A MSD	SampType: MSD	TestCode: 01 IC ANIONS	Units: mg/L	Prep Date: 1/22/03	Run ID: CRANE_030122A						
Client ID: PAINTED TURTLE H	Batch ID: R12818	TestNo: EPA 300.0		Analysis Date: 1/22/03	SeqNo: 154776						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride	4.31	0.250	2	2.56	87.5	75	125	4.3	0.232	20	
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Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: JUSTIN RUSH
Work Order: 0301141
Project: PAINTED TURTLE HABITAT

ANALYTICAL QC SUMMARY REPORT

TestCode: 01 IC ANIONS

Sample ID: 0301141-01A MSD		SampType: MSD	TestCode: 01 IC ANIONS Units: mg/L			Prep Date: 1/22/03			Run ID: CRANE_030122A		
Client ID: PAINTED TURTLE H		Batch ID: R12818	TestNo: EPA 300.0			Analysis Date: 1/22/03			SeqNo: 154776		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (NO3-N)	0.205	0.0250	0.2	0.033	86	75	125	0.206	0.487	20	
Nitrite (NO2-N)	0.15	0.0250	0.2	0	75	75	125	0.15	0	20	
Phosphate (P)	0.192	0.0500	0.2	0	96	75	125	0.189	1.57	20	
Sulfate	6.38	2.00	5	2.16	84.4	75	125	6.37	0.157	20	

Sample ID: 0301141-01A DUP		SampType: DUP	TestCode: 01 IC ANIONS Units: mg/L			Prep Date: 1/22/03			Run ID: CRANE_030122A		
Client ID: PAINTED TURTLE H		Batch ID: R12818	TestNo: EPA 300.0			Analysis Date: 1/22/03			SeqNo: 154774		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.53	0.250	0	0	0	0	0	2.56	1.18	20	
Nitrate (NO3-N)	0.033	0.0250	0	0	0	0	0	0.033	0	20	
Nitrite (NO2-N)	ND	0.0250	0	0	0	0	0	0	0	20	
Phosphate (P)	ND	0.0500	0	0	0	0	0	0	0	20	
Sulfate	2.15	2.00	0	0	0	0	0	2.16	0.464	20	

Sample ID: CCV		SampType: CCV	TestCode: 01 IC ANIONS Units: mg/L			Prep Date: 1/22/03			Run ID: CRANE_030122A		
Client ID: ZZZZZ		Batch ID: R12818	TestNo: EPA 300.0			Analysis Date: 1/22/03			SeqNo: 154777		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.73	0.250	5	0	94.6	90	110	0	0		
Nitrate (NO3-N)	0.499	0.0250	0.5	0	99.8	90	110	0	0		
Nitrite (NO2-N)	0.473	0.0250	0.5	0	94.6	90	110	0	0		
Phosphate (P)	0.946	0.0500	1	0	94.6	90	110	0	0		
Sulfate	9.5	2.00	10	0	95	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: JUSTIN RUSH
Work Order: 0301141
Project: PAINTED TURTLE HABITAT

ANALYTICAL QC SUMMARY REPORT

TestCode: 01 O&G A

Sample ID: MBLK	SampType: MBLK	TestCode: 01 O&G A	Units: mg/L	Prep Date: 1/24/03	Run ID: NO INST_030124A						
Client ID: ZZZZZ	Batch ID: R12836	TestNo: EPA 1664		Analysis Date: 1/24/03	SeqNo: 154956						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Total ND 5.0

Sample ID: LCS	SampType: LCS	TestCode: 01 O&G A	Units: mg/L	Prep Date: 1/24/03	Run ID: NO INST_030124A						
Client ID: ZZZZZ	Batch ID: R12836	TestNo: EPA 1664		Analysis Date: 1/24/03	SeqNo: 154957						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Total 33.7 5.0 40 0 84.2 65 115 0 0

Sample ID: LCSD	SampType: LCSD	TestCode: 01 O&G A	Units: mg/L	Prep Date: 1/24/03	Run ID: NO INST_030124A						
Client ID: ZZZZZ	Batch ID: R12836	TestNo: EPA 1664		Analysis Date: 1/24/03	SeqNo: 154958						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Total 33.3 5.0 40 0 83.3 65 115 33.7 1.19 20

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: JUSTIN RUSH
Work Order: 0301141
Project: PAINTED TURTLE HABITAT

ANALYTICAL QC SUMMARY REPORT

TestCode: 01 PH A

Sample ID: 0301141-01A DUP	SampType: DUP	TestCode: 01 PH A	Units: pH units	Prep Date: 1/22/03	Run ID: NO INST_030122D						
Client ID: PAINTED TURTLE H	Batch ID: R12819	TestNo: EPA 150.1		Analysis Date: 1/22/03	SeqNo: 154780						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.4	0	0	0	0	0	0	6.4	0	6	

Sample ID: CCV	SampType: CCV	TestCode: 01 PH A	Units: pH units	Prep Date: 1/22/03	Run ID: NO INST_030122D						
Client ID: ZZZZZ	Batch ID: R12819	TestNo: EPA 150.1		Analysis Date: 1/22/03	SeqNo: 154778						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	5.99	0	6	0	99.8	97	103	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: JUSTIN RUSH
 Work Order: 0301141
 Project: PAINTED TURTLE HABITAT

ANALYTICAL QC SUMMARY REPORT

TestCode: 01 PHOS A

Sample ID: MBLK	SampType: MBLK	TestCode: 01 PHOS A	Units: mg/L	Prep Date: 1/22/03	Run ID: HIT MAN_030122B
Client ID: ZZZZZ	Batch ID: R12816	TestNo: EPA 365.3		Analysis Date: 1/22/03	SeqNo: 154734
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus, Total

ND

0.025

Sample ID: LCS	SampType: LCS	TestCode: 01 PHOS A	Units: mg/L	Prep Date: 1/22/03	Run ID: HIT MAN_030122B
Client ID: ZZZZZ	Batch ID: R12816	TestNo: EPA 365.3		Analysis Date: 1/22/03	SeqNo: 154735
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus, Total

0.311

0.025

0.3

0

104

89

113

0

0

Sample ID: LCSD	SampType: LCSD	TestCode: 01 PHOS A	Units: mg/L	Prep Date: 1/22/03	Run ID: HIT MAN_030122B
Client ID: ZZZZZ	Batch ID: R12816	TestNo: EPA 365.3		Analysis Date: 1/22/03	SeqNo: 154736
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus, Total

0.285

0.025

0.3

0

95

89

113

0.311

8.72

20

Sample ID: 0301057-05A MS	SampType: MS	TestCode: 01 PHOS A	Units: mg/L	Prep Date: 1/22/03	Run ID: HIT MAN_030122B
Client ID: ZZZZZ	Batch ID: R12816	TestNo: EPA 365.3		Analysis Date: 1/22/03	SeqNo: 154743
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus, Total

0.211

0.025

0.2

0

106

75

125

0

0

Sample ID: 0301057-01A DUP	SampType: DUP	TestCode: 01 PHOS A	Units: mg/L	Prep Date: 1/22/03	Run ID: HIT MAN_030122B
Client ID: ZZZZZ	Batch ID: R12816	TestNo: EPA 365.3		Analysis Date: 1/22/03	SeqNo: 154738
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus, Total

ND

0.025

0

0

0

0

0

0

0

20

Sample ID: 0301141-01A DUP	SampType: DUP	TestCode: 01 PHOS A	Units: mg/L	Prep Date: 1/22/03	Run ID: HIT MAN_030122B
Client ID: PAINTED TURTLE H	Batch ID: R12816	TestNo: EPA 365.3		Analysis Date: 1/22/03	SeqNo: 154748
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Qualifiers:

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

CLIENT: JUSTIN RUSH
Work Order: 0301141
Project: PAINTED TURTLE HABITAT

ANALYTICAL QC SUMMARY REPORT

TestCode: 01 PHOS A

Sample ID: 0301141-01A DUP		SampType: DUP		TestCode: 01 PHOS A		Units: mg/L		Prep Date: 1/22/03		Run ID: HIT MAN_030122B	
Client ID: PAINTED TURTLE H		Batch ID: R12816		TestNo: EPA 365.3		Analysis Date: 1/22/03		SeqNo: 154748			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	0.421	0.025	0	0	0	0	0	0.427	1.42	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: JUSTIN RUSH
Work Order: 0301141
Project: PAINTED TURTLE HABITAT

ANALYTICAL QC SUMMARY REPORT

TestCode: 01 TDS

Sample ID: MBLK	SampType: MBLK	TestCode: 01 TDS	Units: mg/L	Prep Date: 1/24/03	Run ID: NO INST_030127B						
Client ID: ZZZZZ	Batch ID: R12846	TestNo: EPA 160.1		Analysis Date: 1/27/03	SeqNo: 155072						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera) ND 10.0

Sample ID: LCS	SampType: LCS	TestCode: 01 TDS	Units: mg/L	Prep Date: 1/24/03	Run ID: NO INST_030127B						
Client ID: ZZZZ	Batch ID: R12846	TestNo: EPA 160.1		Analysis Date: 1/27/03	SeqNo: 155073						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera) 217 10.0 200 0 108 90 110 0 0

Sample ID: 0301141-01A DUP	SampType: DUP	TestCode: 01 TDS	Units: mg/L	Prep Date: 1/24/03	Run ID: NO INST_030127B						
Client ID: PAINTED TURTLE H	Batch ID: R12846	TestNo: EPA 160.1		Analysis Date: 1/27/03	SeqNo: 155075						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera) 135 10.0 0 0 0 0 0 0 127 6.11 20

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: JUSTIN RUSH
Work Order: 0301141
Project: PAINTED TURTLE HABITAT

ANALYTICAL QC SUMMARY REPORT

TestCode: 01 TSS

Sample ID: MBLK	SampType: MBLK	TestCode: 01 TSS	Units: mg/L	Prep Date: 1/24/03	Run ID: NO INST_030124B
Client ID: ZZZZZ	Batch ID: R12839	TestNo: EPA160.2		Analysis Date: 1/24/03	SeqNo: 154986
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Suspended Solids (Residue, Non-Filter)	ND	5.00			

Sample ID: LCS	SampType: LCS	TestCode: 01 TSS	Units: mg/L	Prep Date: 1/24/03	Run ID: NO INST_030124B
Client ID: ZZZZZ	Batch ID: R12839	TestNo: EPA160.2		Analysis Date: 1/24/03	SeqNo: 154986
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Suspended Solids (Residue, Non-Filter)	194	5.00	200	0	97 82.6 107 0 0

Sample ID: 0301141-01A DUP	SampType: DUP	TestCode: 01 TSS	Units: mg/L	Prep Date: 1/24/03	Run ID: NO INST_030124B
Client ID: PAINTED TURTLE H	Batch ID: R12839	TestNo: EPA160.2		Analysis Date: 1/24/03	SeqNo: 154988
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Suspended Solids (Residue, Non-Filter)	64	5.00	0	0	0 0 0 0 71 10.4 20

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: JUSTIN RUSH
Work Order: 0301141
Project: PAINTED TURTLE HABITAT

ANALYTICAL QC SUMMARY REPORT

TestCode: 01 TURBIDITY

Sample ID: MBLK	SampType: MBLK	TestCode: 01 TURBIDIT	Units: NTU	Prep Date: 1/22/03	Run ID: TURBO_030122A						
Client ID: ZZZZZ	Batch ID: R12807	TestNo: EPA 180.1		Analysis Date: 1/22/03	SeqNo: 154640						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	ND	0.10									

Sample ID: LCS	SampType: LCS	TestCode: 01 TURBIDIT	Units: NTU	Prep Date: 1/22/03	Run ID: TURBO_030122A						
Client ID: ZZZZZ	Batch ID: R12807	TestNo: EPA 180.1		Analysis Date: 1/22/03	SeqNo: 154641						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	151	0.10	160	0	94.4	85	115	0	0		

Sample ID: 0301141-01A DUP	SampType: DUP	TestCode: 01 TURBIDIT	Units: NTU	Prep Date: 1/22/03	Run ID: TURBO_030122A						
Client ID: PAINTED TURTLE H	Batch ID: R12807	TestNo: EPA 180.1		Analysis Date: 1/22/03	SeqNo: 154643						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	9.7	0.10	0	0	0	0	0	9.9	2.04	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: JUSTIN RUSH
 Work Order: 0301141
 Project: PAINTED TURTLE HABITAT

ANALYTICAL QC SUMMARY REPORT

TestCode: 02 ICPA

Sample ID: MB-5334	SampType: MBLK	TestCode: 02 ICPA	Units: mg/L	Prep Date: 1/23/03	Run ID: ICP_030127A						
Client ID: ZZZZZ	Batch ID: 5334	TestNo: EPA 6010B (3005A)		Analysis Date: 1/27/03	SeqNo: 155106						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	ND	0.0050									
Copper	ND	0.0050									
Hardness	ND	0.33									
Lead	ND	0.0050									
Zinc	ND	0.0050									

Sample ID: LCS-5334	SampType: LCS	TestCode: 02 ICPA	Units: mg/L	Prep Date: 1/23/03	Run ID: ICP_030127A						
Client ID: ZZZZZ	Batch ID: 5334	TestNo: EPA 6010B	(3005A)	Analysis Date: 1/27/03	SeqNo: 155107						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	0.473	0.0050	0.5	0	94.6	80	120	0	0		
Copper	0.475	0.0050	0.5	0	95	80	120	0	0		
Hardness	31	0.33	33.1	0	93.7	80	120	0	0		
Lead	0.475	0.0050	0.5	0	95	80	120	0	0		
Zinc	0.471	0.0050	0.5	0	94.2	80	120	0	0		

Sample ID: 0301141-01A MS	SampType: MS	TestCode: 02 ICPA	Units: mg/L	Prep Date: 1/23/03	Run ID: ICP_030127A						
Client ID: PAINTED TURTLE H	Batch ID: 5334	TestNo: EPA 6010B (3005A)		Analysis Date: 1/27/03	SeqNo: 155109						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	0.473	0.0050	0.5	0	94.6	75	125	0	0		
Copper	0.487	0.0050	0.5	0.0051	96.4	75	125	0	0		
Hardness	99.8	0.33	33.1	69.2	92.4	75	125	0	0		
Lead	0.474	0.0050	0.5	0	94.8	75	125	0	0		
Zinc	0.491	0.0050	0.5	0.022	93.8	75	125	0	0		

Sample ID: 0301141-01A MSD	SampType: MSD	TestCode: 02 ICPA	Units: mg/L	Prep Date: 1/23/03	Run ID: ICP_030127A						
Client ID: PAINTED TURTLE H	Batch ID: 5334	TestNo: EPA 6010B (3005A)		Analysis Date: 1/27/03	SeqNo: 155110						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	0.475	0.0050	0.5	0	95	75	125	0.473	0.422	20	
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Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: JUSTIN RUSH
 Work Order: 0301141
 Project: PAINTED TURTLE HABITAT

ANALYTICAL QC SUMMARY REPORT

TestCode: 02 ICPA

Sample ID: 0301141-01A MSD	SampType: MSD	TestCode: 02 ICPA	Units: mg/L	Prep Date: 1/23/03	Run ID: ICP_030127A						
Client ID: PAINTED TURTLE H	Batch ID: 5334	TestNo: EPA 6010B	(3005A)	Analysis Date: 1/27/03	SeqNo: 155110						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.486	0.0050	0.5	0.0051	96.2	75	125	0.487	0.206	20	
Hardness	101	0.33	33.1	69.2	96.1	75	125	99.8	1.20	20	
Lead	0.476	0.0050	0.5	0	95.2	75	125	0.474	0.421	20	
Zinc	0.497	0.0050	0.5	0.022	95	75	125	0.491	1.21	20	

Sample ID: 0301154-01A DUP	SampType: DUP	TestCode: 02 ICPA	Units: mg/L	Prep Date: 1/23/03	Run ID: ICP_030127A						
Client ID: ZZZZZ	Batch ID: 5334	TestNo: EPA 6010B (3005A)		Analysis Date: 1/27/03	SeqNo: 155112						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.0512	0.0050	0	0	0	0	0	0.0512	0	20	
Copper	34.9	0.25	0	0	0	0	0	33.5	4.09	20	
Hardness	28.6	0.33	0	0	0	0	0	28.8	0.697	20	
Lead	28.1	0.0050	0	0	0	0	0	28.3	0.709	20	
Zinc	4.7	0.0050	0	0	0	0	0	4.72	0.425	20	

Sample ID: CCV	SampType: CCV	TestCode: 02 ICPA	Units: mg/L	Prep Date: 12/18/02	Run ID: ICP_030127A						
Client ID: ZZZZZ	Batch ID: 5230	TestNo: EPA 6010B		Analysis Date: 1/27/03	SeqNo: 155124						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.497	0.0050	0.5	0	99.4	90	110	0	0		
Copper	0.499	0.0050	0.5	0	99.8	90	110	0	0		
Hardness	161	0.33	165	0	97.6	90	110	0	0		
Lead	0.497	0.0050	0.5	0	99.4	90	110	0	0		
Zinc	0.49	0.0050	0.5	0	98	90	110	0	0		

Sample ID: ICVLOW	SampType: ICV	TestCode: 02 ICPA	Units: mg/L	Prep Date: 1/23/03	Run ID: ICP_030127A						
Client ID: ZZZZZ	Batch ID: 5334	TestNo: EPA 6010B		Analysis Date: 1/27/03	SeqNo: 155105						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.502	0.0050	0.5	0	100	90	110	0	0		
Copper	0.499	0.0050	0.5	0	99.8	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: JUSTIN RUSH
Work Order: 0301141
Project: PAINTED TURTLE HABITAT

ANALYTICAL QC SUMMARY REPORT

TestCode: 02 ICPA

Sample ID: ICVLOW	SampType: ICV	TestCode: 02 ICPA	Units: mg/L	Prep Date: 1/23/03	Run ID: ICP_030127A						
Client ID: ZZZZZ	Batch ID: 5334	TestNo: EPA 6010B		Analysis Date: 1/27/03	SeqNo: 155105						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.501	0.0050	0.5	0	100	90	110	0	0		
Zinc	0.492	0.0050	0.5	0	98.4	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

ENVIRONMENTAL SERVICES LABORATORY – GLOSSARY OF FLAGS

<u>QUALIFIER</u>	<u>DESCRIPTION</u>
AA	This sample was analyzed after the holding time had expired.
AB	The hydrocarbon pattern in this sample is not typical of gasoline.
AC	The hydrocarbon pattern in this sample is not typical of diesel.
AD	The hydrocarbon pattern in this sample is not typical of oil.
AE	The hydrocarbon pattern in this sample extends into the gasoline range.
AF	The hydrocarbon pattern in this sample extends into the diesel range.
AG	The hydrocarbon pattern in this sample extends into the oil range.
A	This analysis was performed on a VOA sample containing headspace.
B	Analyte detected in the Method Blank above the reporting level.
C	The Relative Percent Difference (RPD) for the primary result and confirmation result was greater than 40%. The higher result was reported.
D	The sample was supplied in an inappropriate container according to method criteria.
E	This value is above the quantitation limit. It is considered an estimate.
H	The Matrix Spike/Matrix Spike Duplicate (MS/MSD) result was outside control limits. The Laboratory Control Standard/Duplicate (LCS/LCSD) result was in control validating the batch.
J	The result is above the Method Detection Limit (MDL) and below the Reporting level (RL). It is considered an estimate.
M	The MS/MSD recoveries are not calculable due to a high amount of analyte in sample.
MI	This indicates a high level of matrix interference affecting the spike or surrogate recovery.
N	See case narrative.
O	Detection Limits are elevated due to sample dilution. See case narrative.
Q	Further inspection of the sample confirms a non-homogenous sample matrix affecting RPD result.
R	The RPD result is outside method control limits. See other qualifiers or case narrative.
S	The spike recovery is outside method control limits. See other qualifiers or case narrative.
T	The RPD between the sample result and duplicate result was greater than 20%. The original result was less than three times the reporting level, therefore the RPD is not applicable.
X	Unable to quantitate surrogate recovery due to sample dilution.

