HT Simdis Simdis HT

Sample name	: Williston		
Acquired on	: 1/30/2015 2:01:49 PM	Vial	: 103
Processed on	: 2/1/2015 9:31:07 AM	Injection	: 1
Sample type	: opusoil	Sample (g)	: 0.23710
Method name	: HT750C	Solvent (g)	: 12.27080
Operator	: SYSTEM	ISTD (g)	: 0.00000
Sequence name	: C:\CHEM32\1\SEQUENCE\013015.S		
Data File	: 013015\103F0901.D\		

General Variables-Hydrocarbon

Analysis Type	Sample analysis
Application Name	Simdis HT
Normalization method	
Found Recovery	100.0 (%)
Sample Type Name	opusoil
Used Blank	013015\101F0301.D\
Used BP Calibrant	012215\116F1301.D
Used Reference	013015\102F0701.D

C5 – C34

BP Distribution table - Percent

Recovered mass%	BP °F	Recovered mass%	BP °F	Recovered mass%	BP °F	Recovered mass%	BP °F
IBP	320.4	26.0	552.2	52.0	695.2	78.0	873.6
1.0	345.0	27.0	557.8	53.0	701.2	79.0	882.2
2.0	372.8	28.0	562.8	54.0	707.4	80.0	891.2
3.0	389.6	29.0	568.0	55.0	713.8	81.0	900.4
4.0	404.8	30.0	573.8	56.0	719.6	82.0	910.0
5.0	417.0	31.0	578.0	57.0	726.0	83.0	919.8
6.0	425.6	32.0	583.2	58.0	732.4	84.0	929.8
7.0	433.8	33.0	588.4	59.0	738.6	85.0	940.2
8.0	442.6	34.0	593.8	60.0	745.0	86.0	951.0
9.0	450.4	35.0	599.2	61.0	751.4	87.0	962.6
10.0	457.2	36.0	603.8	62.0	757.6	88.0	975.0
11.0	465.4	37.0	609.4	63.0	764.0	89.0	987.8
12.0	472.8	38.0	615.0	64.0	770.6	90.0	1002.0
13.0	478.8	39.0	621.0	65.0	777.0	91.0	1017.2
14.0	485.0	40.0	626.4	66.0	783.6	92.0	1034.0
15.0	491.0	41.0	631.6	67.0	790.2	93.0	1051.4
16.0	497.2	42.0	637.4	68.0	796.8	94.0	1071.4
17.0	503.6	43.0	643.6	69.0	803.8	95.0	1093.6
18.0	509.0	44.0	649.6	70.0	810.8	96.0	1119.2
19.0	513.8	45.0	654.8	71.0	817.8	97.0	1149.8
20.0	519.4	46.0	660.6	72.0	825.2	98.0	1186.6
21.0	524.0	47.0	666.4	73.0	832.8	99.0	1236.2
22.0	530.2	48.0	672.0	74.0	840.4	FBP	1274.2
23.0	536.2	49.0	677.6	75.0	848.4		
24.0	541.8	50.0	683.4	76.0	856.6		
25.0	547.8	51.0	689.6	77.0	865.0		

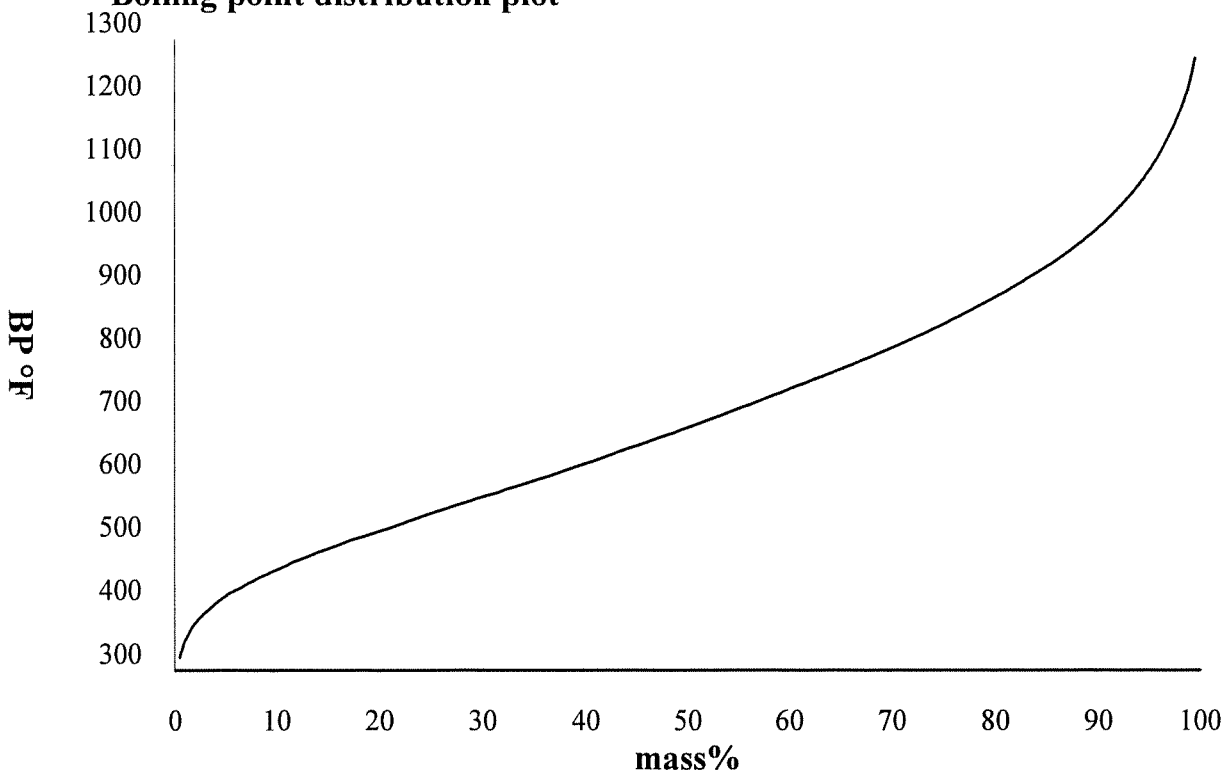
HT Simdis Simdis HT

Sample name	: Williston		
Acquired on	: 1/30/2015 2:01:49 PM	Vial	: 103
Processed on	: 2/1/2015 9:31:07 AM	Injection	: 1
Data File	: 013015\103F0901.D\		

BP Distribution table - cut points

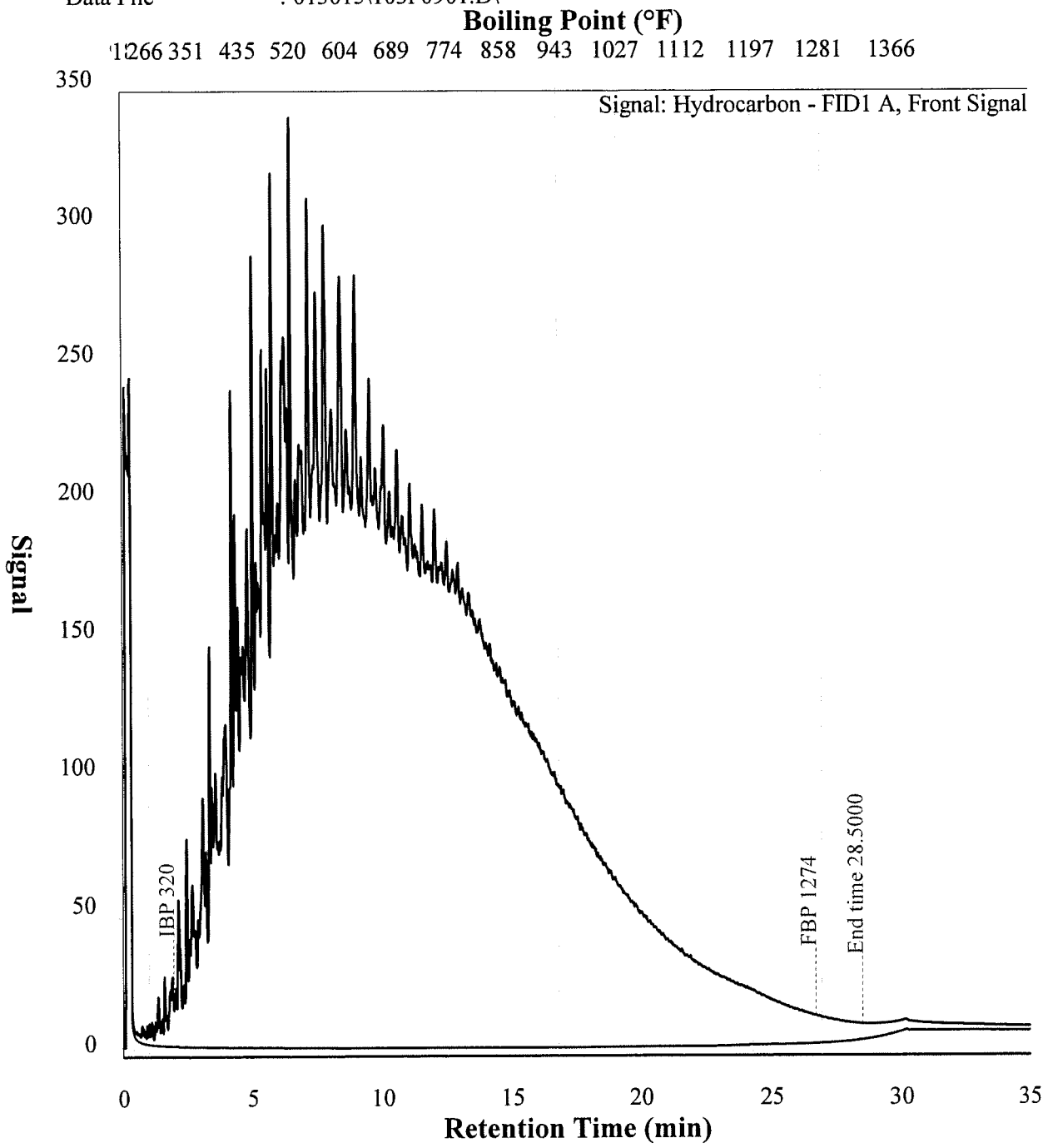
	BP °F	Recovered mass%	Residual mass%	Fraction mass%		BP °F	Recovered mass%	Residual mass%	Fraction mass%
C5	97.0	<IBP	100.0	0.0	C20	651.0	44.3	55.7	4.4
C6	156.0	<IBP	99.9	0.0	C21	674.0	48.4	51.6	4.1
C7	209.0	<IBP	99.9	0.0	C22	696.0	52.1	47.9	3.7
C8	258.0	<IBP	99.9	0.0	C23	716.0	55.4	44.6	3.3
C9	303.0	<IBP	99.7	0.2	C24	736.0	58.6	41.4	3.2
C10	345.0	1.0	99.0	0.7	C25	755.0	61.6	38.4	3.0
C11	385.0	2.6	97.4	1.6	C26	774.0	64.6	35.4	3.0
C12	421.0	5.4	94.6	2.8	C27	791.0	67.1	32.9	2.6
C13	456.0	9.8	90.2	4.3	C28	808.0	69.6	30.4	2.5
C14	488.0	14.3	85.7	4.6	C29	825.0	72.0	28.0	2.4
C15	519.0	19.9	80.1	5.6	C30	840.0	73.9	26.1	2.0
C16	548.0	25.1	74.9	5.1	C31	856.0	75.9	24.1	2.0
C17	576.0	30.5	69.5	5.4	C32	870.0	77.6	22.4	1.6
C18	601.0	35.4	64.6	4.9	C33	885.0	79.3	20.7	1.7
C19	626.0	39.9	60.1	4.5	C34	898.0	80.7	19.3	1.4

Boiling point distribution plot



HT Simdis Simdis HT

Sample name	: Williston		
Acquired on	: 1/30/2015 2:01:49 PM	Vial	: 103
Processed on	: 2/1/2015 9:31:07 AM	Injection	: 1
Data File	: 013015\103F0901.D\		



HT Simdis Simdis HT

Sample name	: Williston		
Acquired on	: 1/30/2015 2:01:49 PM	Vial	: 103
Processed on	: 2/1/2015 9:31:07 AM	Injection	: 1
Sample type	: opusoil	Sample (g)	: 0.23710
Method name	: HT750C	Solvent (g)	: 12.27080
Operator	: SYSTEM	ISTD (g)	: 0.00000
Sequence name	: C:\CHEM32\1\SEQUENCE\013015.S		
Data File	: 013015\103F0901.D\		

General Variables-Hydrocarbon

Analysis Type	Sample analysis
Application Name	Simdis HT
Normalization method	
Found Recovery	100.0 (%)
Sample Type Name	opusoil
Used Blank	013015\101F0301.D\
Used BP Calibrant	012215\116F1301.D
Used Reference	013015\102F0701.D

C35 — C64

BP Distribution table - Percent

Recovered mass%	BP °F	Recovered mass%	BP °F	Recovered mass%	BP °F	Recovered mass%	BP °F
IBP	320.4	26.0	552.2	52.0	695.2	78.0	873.6
1.0	345.0	27.0	557.8	53.0	701.2	79.0	882.2
2.0	372.8	28.0	562.8	54.0	707.4	80.0	891.2
3.0	389.6	29.0	568.0	55.0	713.8	81.0	900.4
4.0	404.8	30.0	573.8	56.0	719.6	82.0	910.0
5.0	417.0	31.0	578.0	57.0	726.0	83.0	919.8
6.0	425.6	32.0	583.2	58.0	732.4	84.0	929.8
7.0	433.8	33.0	588.4	59.0	738.6	85.0	940.2
8.0	442.6	34.0	593.8	60.0	745.0	86.0	951.0
9.0	450.4	35.0	599.2	61.0	751.4	87.0	962.6
10.0	457.2	36.0	603.8	62.0	757.6	88.0	975.0
11.0	465.4	37.0	609.4	63.0	764.0	89.0	987.8
12.0	472.8	38.0	615.0	64.0	770.6	90.0	1002.0
13.0	478.8	39.0	621.0	65.0	777.0	91.0	1017.2
14.0	485.0	40.0	626.4	66.0	783.6	92.0	1034.0
15.0	491.0	41.0	631.6	67.0	790.2	93.0	1051.4
16.0	497.2	42.0	637.4	68.0	796.8	94.0	1071.4
17.0	503.6	43.0	643.6	69.0	803.8	95.0	1093.6
18.0	509.0	44.0	649.6	70.0	810.8	96.0	1119.2
19.0	513.8	45.0	654.8	71.0	817.8	97.0	1149.8
20.0	519.4	46.0	660.6	72.0	825.2	98.0	1186.6
21.0	524.0	47.0	666.4	73.0	832.8	99.0	1236.2
22.0	530.2	48.0	672.0	74.0	840.4	FBP	1274.2
23.0	536.2	49.0	677.6	75.0	848.4		
24.0	541.8	50.0	683.4	76.0	856.6		
25.0	547.8	51.0	689.6	77.0	865.0		

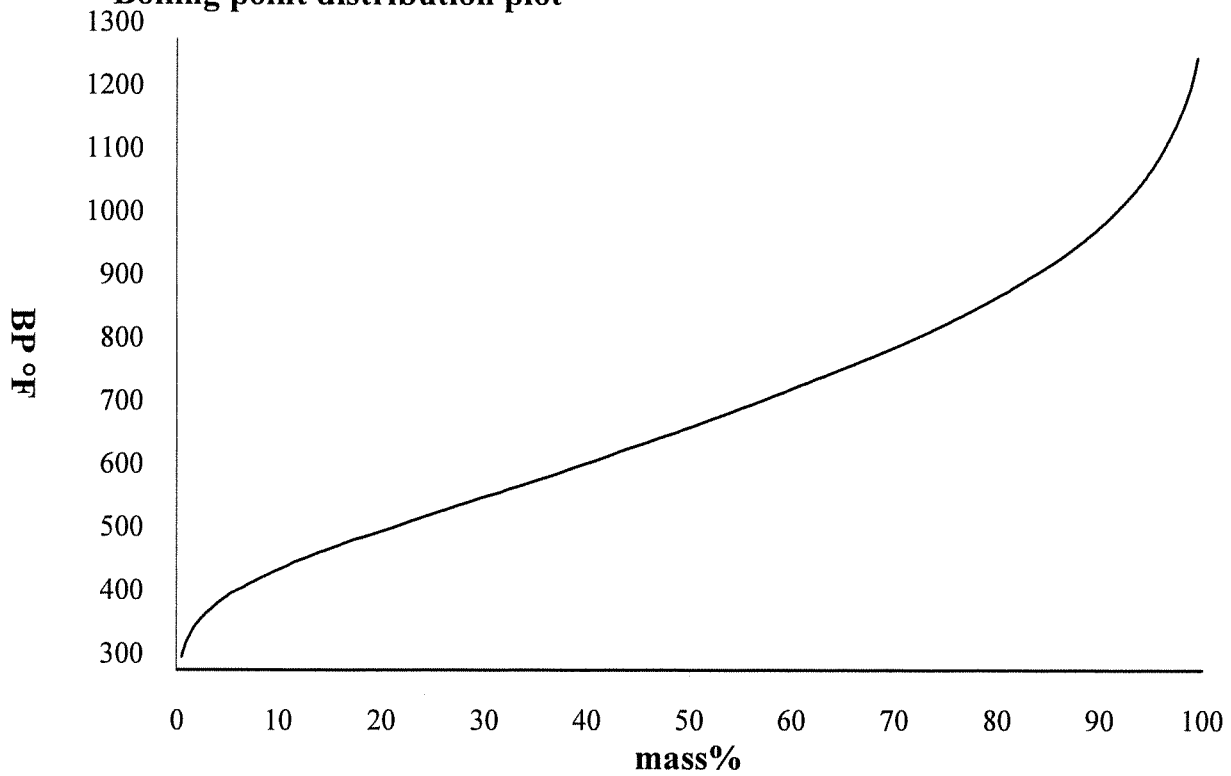
HT Simdis Simdis HT

Sample name	: Williston		
Acquired on	: 1/30/2015 2:01:49 PM	Vial	: 103
Processed on	: 2/1/2015 9:31:07 AM	Injection	: 1
Data File	: 013015\103F0901.D\		

BP Distribution table - cut points

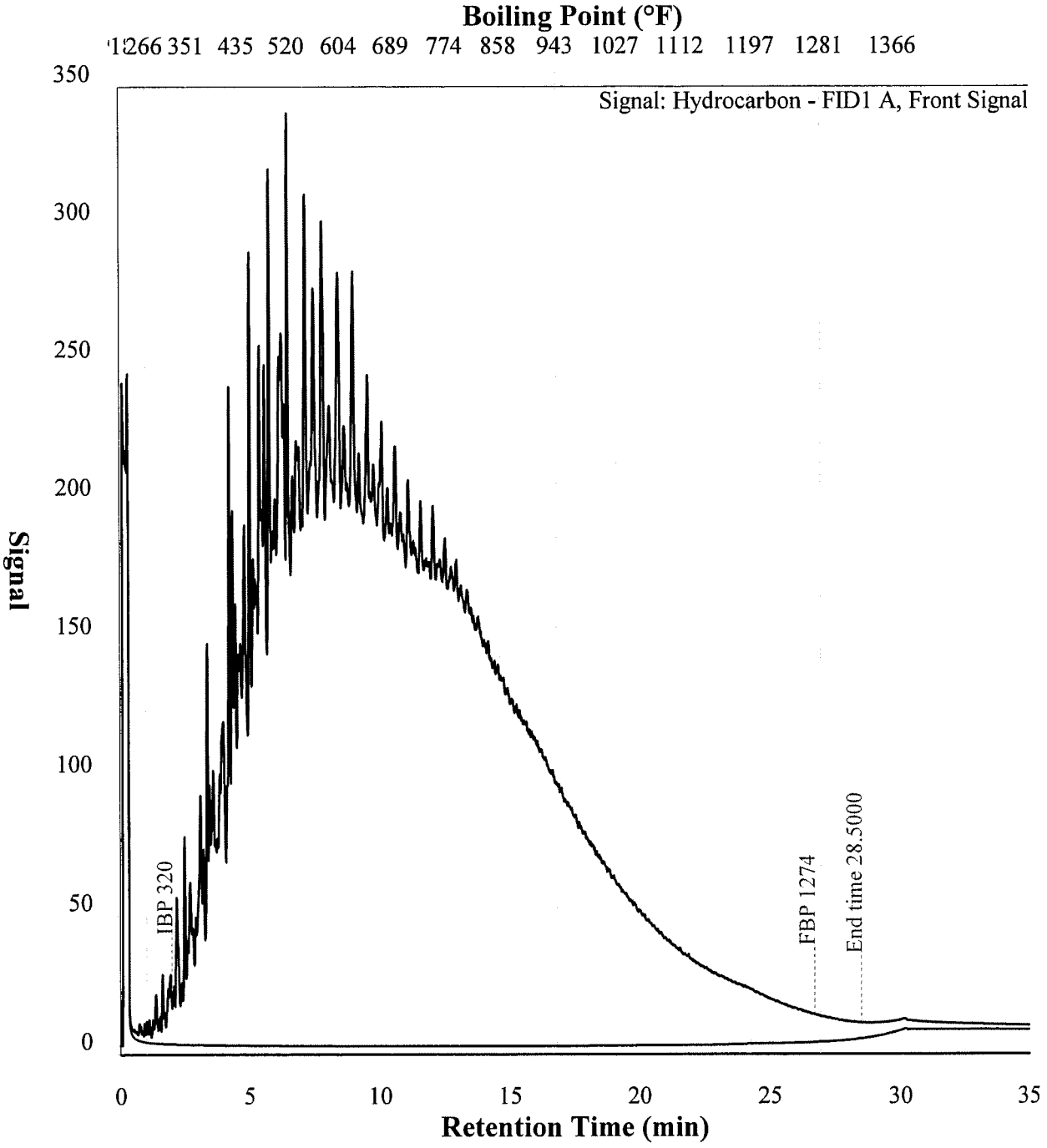
BP °F	Recovered mass%	Residual mass%	Fraction mass%	BP °F	Recovered mass%	Residual mass%	Fraction mass%
912.0	82.2	17.8	82.2	1067.0	93.8	6.2	0.5
925.0	83.5	16.5	1.3	1074.0	94.1	5.9	0.3
937.0	84.7	15.3	1.2	1083.0	94.5	5.5	0.4
948.0	85.7	14.3	1.0	1090.0	94.8	5.2	0.3
961.0	86.9	13.1	1.1	1098.0	95.2	4.8	0.3
972.0	87.8	12.2	0.9	1105.0	95.5	4.5	0.3
982.0	88.6	11.4	0.8	1112.0	95.7	4.3	0.3
993.0	89.4	10.6	0.8	1119.0	96.0	4.0	0.3
1004.0	90.1	9.9	0.8	1126.0	96.2	3.8	0.2
1013.0	90.7	9.3	0.6	1134.0	96.5	3.5	0.3
1022.0	91.3	8.7	0.6	1139.0	96.7	3.3	0.2
1033.0	91.9	8.1	0.6	1146.0	96.9	3.1	0.2
1042.0	92.5	7.5	0.5	1152.0	97.1	2.9	0.2
1051.0	93.0	7.0	0.5	1157.0	97.2	2.8	0.1
1058.0	93.3	6.7	0.4	1164.0	97.4	2.6	0.2

Boiling point distribution plot



HT Simdis Simdis HT

Sample name	: Williston		
Acquired on	: 1/30/2015 2:01:49 PM	Vial	: 103
Processed on	: 2/1/2015 9:31:07 AM	Injection	: 1
Data File	: 013015\103F0901.D\		



HT Simdis Simdis HT 1

Sample name	: Williston		
Acquired on	: 1/30/2015 2:01:49 PM	Vial	: 103
Processed on	: 2/1/2015 9:31:07 AM	Injection	: 1
Sample type	: opusoil	Sample (g)	: 0.23710
Method name	: HT750C	Solvent (g)	: 12.27080
Operator	: SYSTEM	ISTD (g)	: 0.00000
Sequence name	: C:\CHEM32\1\SEQUENCE\013015.S		
Data File	: 013015\103F0901.D\		

General Variables-Hydrocarbon

Analysis Type	Sample analysis
Application Name	Simdis HT
Normalization method	
Found Recovery	100.0 (%)
Sample Type Name	opusoil
Used Blank	013015\101F0301.D\
Used BP Calibrant	012215\116F1301.D
Used Reference	013015\102F0701.D

C6s – C85

BP Distribution table - Percent

Recovered mass%	BP °F	Recovered mass%	BP °F	Recovered mass%	BP °F	Recovered mass%	BP °F
IBP	320.4	26.0	552.2	52.0	695.2	78.0	873.6
1.0	345.0	27.0	557.8	53.0	701.2	79.0	882.2
2.0	372.8	28.0	562.8	54.0	707.4	80.0	891.2
3.0	389.6	29.0	568.0	55.0	713.8	81.0	900.4
4.0	404.8	30.0	573.8	56.0	719.6	82.0	910.0
5.0	417.0	31.0	578.0	57.0	726.0	83.0	919.8
6.0	425.6	32.0	583.2	58.0	732.4	84.0	929.8
7.0	433.8	33.0	588.4	59.0	738.6	85.0	940.2
8.0	442.6	34.0	593.8	60.0	745.0	86.0	951.0
9.0	450.4	35.0	599.2	61.0	751.4	87.0	962.6
10.0	457.2	36.0	603.8	62.0	757.6	88.0	975.0
11.0	465.4	37.0	609.4	63.0	764.0	89.0	987.8
12.0	472.8	38.0	615.0	64.0	770.6	90.0	1002.0
13.0	478.8	39.0	621.0	65.0	777.0	91.0	1017.2
14.0	485.0	40.0	626.4	66.0	783.6	92.0	1034.0
15.0	491.0	41.0	631.6	67.0	790.2	93.0	1051.4
16.0	497.2	42.0	637.4	68.0	796.8	94.0	1071.4
17.0	503.6	43.0	643.6	69.0	803.8	95.0	1093.6
18.0	509.0	44.0	649.6	70.0	810.8	96.0	1119.2
19.0	513.8	45.0	654.8	71.0	817.8	97.0	1149.8
20.0	519.4	46.0	660.6	72.0	825.2	98.0	1186.6
21.0	524.0	47.0	666.4	73.0	832.8	99.0	1236.2
22.0	530.2	48.0	672.0	74.0	840.4	FBP	1274.2
23.0	536.2	49.0	677.6	75.0	848.4		
24.0	541.8	50.0	683.4	76.0	856.6		
25.0	547.8	51.0	689.6	77.0	865.0		

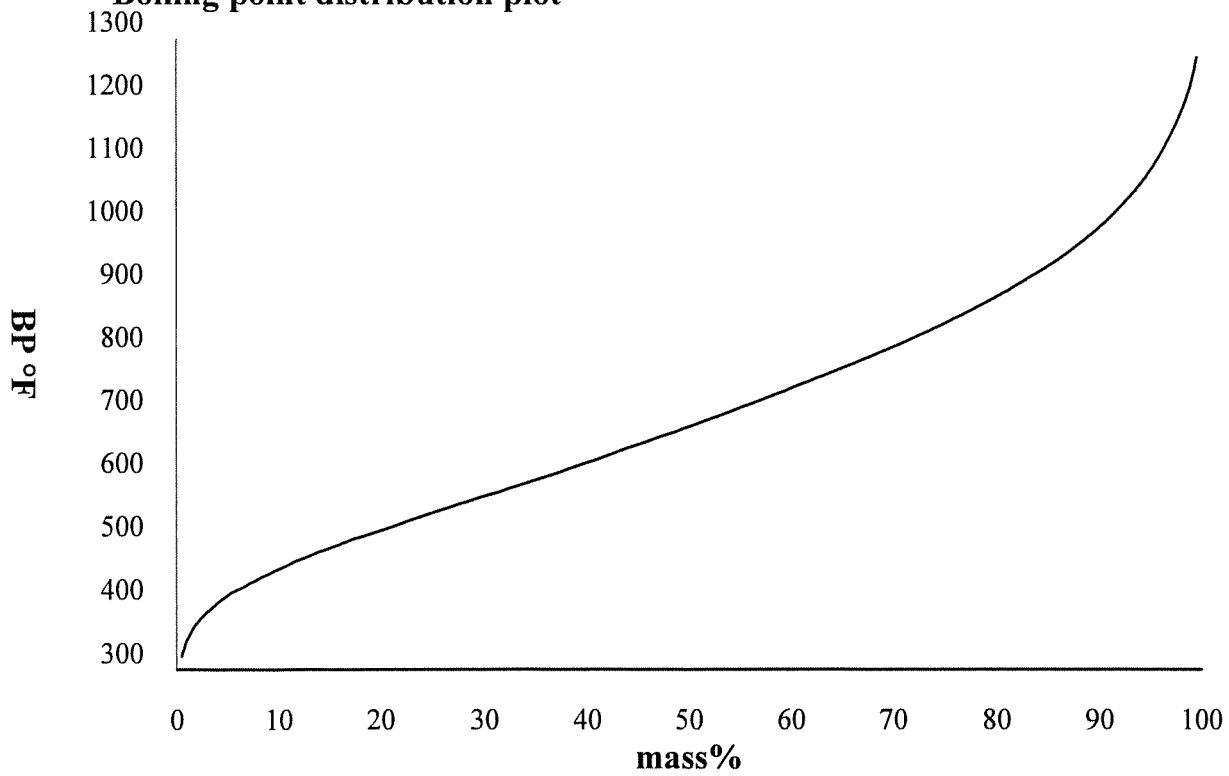
HT Simdis Simdis HT 2

Sample name	: Williston		
Acquired on	: 1/30/2015 2:01:49 PM	Vial	: 103
Processed on	: 2/1/2015 9:31:07 AM	Injection	: 1
Data File	: 013015\103F0901.D\		

BP Distribution table - cut points

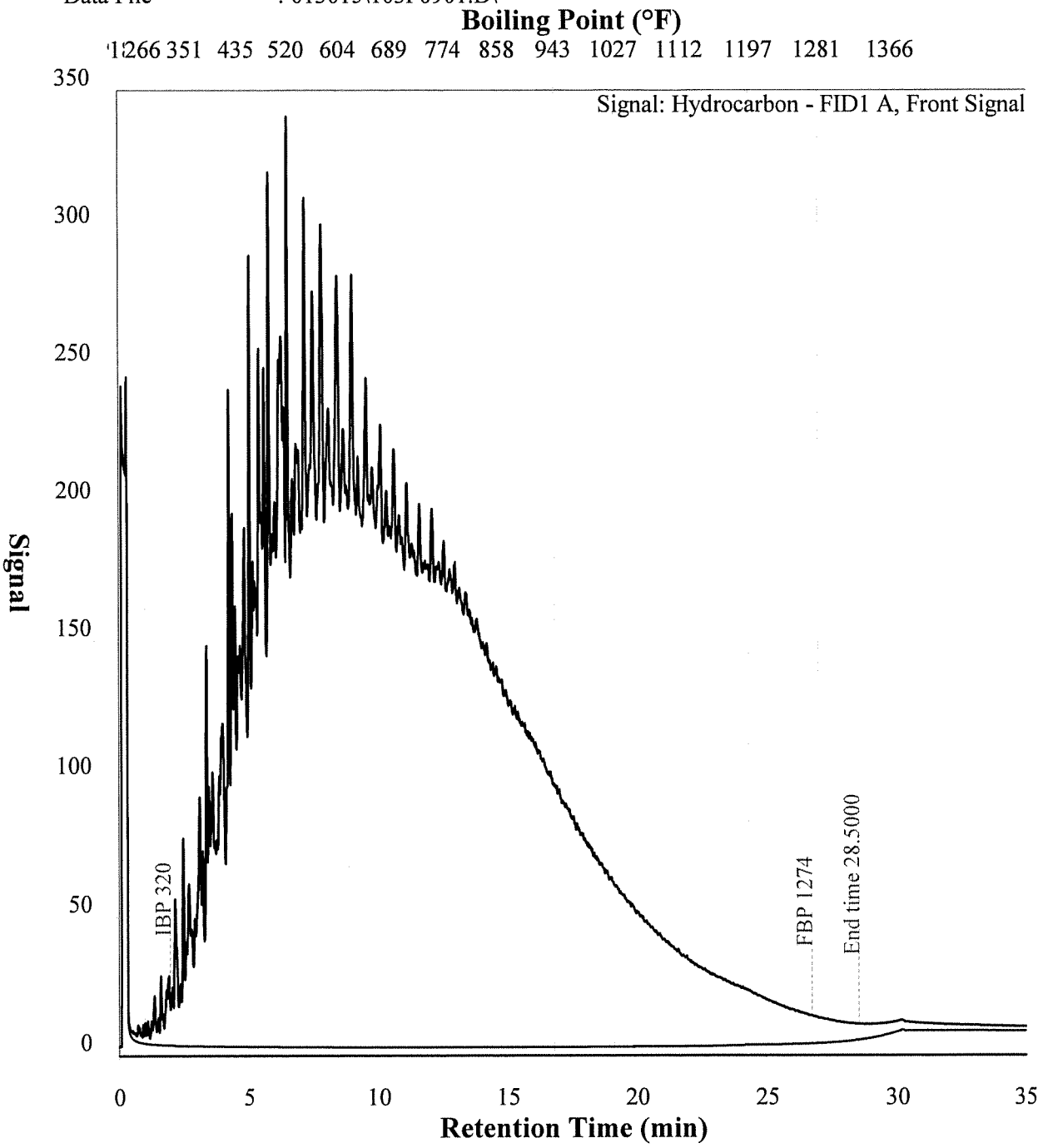
BP °F	Recovered mass%	Residual mass%	Fraction mass%	BP °F	Recovered mass%	Residual mass%	Fraction mass%
1170.0	97.6	2.4	97.6	1252.0	99.2	0.8	0.1
1175.0	97.7	2.3	0.1	1258.0	99.3	0.7	0.1
1180.0	97.8	2.2	0.1	1261.0	99.3	0.7	0.0
1186.0	98.0	2.0	0.2	1267.0	99.4	0.6	0.1
1191.0	98.1	1.9	0.1	1270.0	99.5	0.5	0.0
1197.0	98.3	1.7	0.1	1276.0	>FBP	0.5	0.1
1202.0	98.4	1.6	0.1	1279.0	>FBP	0.4	0.0
1211.0	98.5	1.5	0.2	1283.0	>FBP	0.4	0.0
1216.0	98.6	1.4	0.1	1287.0	>FBP	0.4	0.0
1222.0	98.8	1.2	0.1	1292.0	>FBP	0.3	0.1
1227.0	98.9	1.1	0.1	1296.0	>FBP	0.3	0.0
1233.0	98.9	1.1	0.1	1299.0	>FBP	0.2	0.0
1238.0	99.0	1.0	0.1	1303.0	>FBP	0.2	0.0
1243.0	99.1	0.9	0.1	1306.0	>FBP	0.2	0.0
1247.0	99.2	0.8	0.1	1310.0	>FBP	0.1	0.0

Boiling point distribution plot



HT Simdis Simdis HT

Sample name	: Williston		
Acquired on	: 1/30/2015 2:01:49 PM	Vial	: 103
Processed on	: 2/1/2015 9:31:07 AM	Injection	: 1
Data File	: 013015\103F0901.D\		



St. Rose - Attn: Chris Bothe
B7169 - Simulated distillation

SGS CHAIN OF CUSTODY | CONVENTIONAL & SHALE

PROJECT INFO:

PROJECT: Black Tail Creek Spill

P.O. #:

QUOTE #:

SITE REF:

TURN AROUND TIME:

REPORT LEVEL: (see reverse) ☐ Level I ☐ Level II ☐ Level IV

SPECIAL DELIVERABLES: ☐ State of Origin:
☐ EDD: ☐ Other:

SEND DOCUMENTATION / RESULTS TO:

COMPANY:

CONTACT:

ADDRESS:

PHONE:

EMAIL:

INVOICE TO: (☐ CHECK IF SAME)

COMPANY: CONTACT:

ADDRESS:

PHONE:

EMAIL:

SPECIAL INSTRUCTIONS / COMMENTS:

PRESERVATIVE

ANALYSIS & METHOD

X B7169

LAB ID	SAMPLE ID / DESCRIPTION	DATE	TIME	QC MS	QC MSD	QC DUP	TYPE (C, G)	MATRIX	CONT. QTY	REMARKS
	Rope Skimmer Basin	1/27	11:40					~~water~~	1	
	Sample 01							Emulsion		

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:
Conan Blanchard	1/28/15	13:45	Peter Tresslar
RELINQUISHED BY (2):	DATE:	TIME:	RECEIVED BY:
[illegible]	1/28/15	13:45	[illegible]

RECEIVED BY LABORATORY: DATE: TIME:

COC SEAL: ☐ INTACT ☐ BROKEN ☐ ABSENT

SAMPLE RECEIPT TEMP: °C

CARRIER: TRACKING #:

NOTES:

SGS NORTH AMERICA INC. | ENVIRONMENTAL SERVICES 5500 Business Drive Wilmington, NC 28405 910 350 1903 | 910 794 1613 www.sgs.com

Blacktail Creek Spill Final EPA Water Sampling Results								
						SampID:	BT-PW-01	BT-PW-02
						SampDate:	1/24/2015	1/25/2015
						SampTime:	14:20	10:20
Analyte	CAS_NO	Units	EPA MCL	ND Stream Class I and II HHV	ND WQS Acute Standard[1]	ND WQS Chronic Standard[2]	Produced Water[7]: Moline 2H and Moline 3H Well Pad	Produced Water[7]: State 1H Well Pad
Metals								
Aluminum	7429-90-5	mg/L					1 U	1 U
Antimony	7440-36-0	mg/L	0.006	0.0056			0.4 U	0.4 U
Arsenic	7440-38-2	mg/L	0.010	0.01			0.1 U	0.1 U
Barium	7440-39-3	mg/L	2.0				**14.4**	**15.3**
Beryllium	7440-41-7	mg/L	0.004	0.004			0.2 U	0.2 U
Cadmium	7440-43-9	mg/L	0.005	0.005			0.05 U	0.05 U
Calcium	7440-70-2	mg/L					20500	19700
Chromium	7440-47-3	mg/L	0.10				**0.275**	0.1 U
Cobalt	7440-48-4	mg/L					0.1 U	0.1 U
Copper	7440-50-8	mg/L	1.3	1			0.1 U	0.1 U
Iron	7439-89-6	mg/L					120	164
Lead	7439-92-1	mg/L	0.015	0.015			0.1 U	0.1 U
Magnesium	7439-95-4	mg/L					1830	1750
Manganese	7439-96-5	mg/L					9.08	64
Mercury	7439-97-6	mg/L					0.00015 U	0.00015 U
Nickel	7440-02-0	mg/L		0.1			0.1 U	0.1 U
Potassium	9/7/7440	mg/L					13900	17200
Selenium	7782-49-2	mg/L	0.05	0.05			0.2 U	0.2 U
Silver	7440-22-4	mg/L					0.1 U	0.1 U
Sodium	7440-23-5	mg/L					223000	209000
Thallium	7440-28-0	mg/L	0.002	0.00024			**0.254**	**0.22**
Vanadium	7440-62-2	mg/L					0.5 U	0.5 U
Zinc	7440-66-6	mg/L		7.4			0.529	0.201
General Chemistry								

Blacktail Creek Spill Final EPA Water Sampling Results								
						SampID:	**BT-PW-01**	**BT-PW-02**
						SampDate:	**1/24/2015**	**1/25/2015**
						SampTime:	**14:20**	**10:20**
Analyte	**CAS_NO**	**Units**	**EPA MCL**	**ND Stream Class I and II HHV**	**ND WQS Acute Standard[1]**	**ND WQS Chronic Standard[2]**	**Produced Water[7]: Moline 2H and Moline 3H Well Pad**	**Produced Water[7]: State 1H Well Pad**
Bicarbonate Alkalinity	T-005-B	mg/L					104	87.7
Carbonate Alkalinity	T-005-C	mg/L					25 U	25 U
Hydroxide Alkalinity	WET-015	mg/L					25 U	25 U
Phenolphthalein Alkalinity	WET-026	mg/L					25 U	25 U
Total Alkalinity	000000-00-5	mg/L					104	87.7
Sulfate	14808-79-8	mg/L				450[3]	**500**	377
Chloride	16887-00-6	mg/L				250[4]	**214000**	**174000**
Ammonia as N	7664-41-7	mg/L			4.71 - 10.13[5]	1.43 - 2.73[6]	**96.2 J**	**99.7 J**
Total Petroleum Hydrocarbons								
Diesel Range Organics (DRO)	GCSV-00-4	mg/L					3.28	3.67
Gasoline Range Organics (GRO)	Gas	mg/L					1.98	4.15
HEM-Oil & Grease	C-007	mg/L					6.86	26.7
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	630-20-6	ug/L					40 U	50 U
1,1,1-Trichloroethane	71-55-6	ug/L	200	200			40 U	50 U
1,1,2,2-Tetrachloroethane	79-34-5	ug/L		0.17			40 U	50 U
1,1,2-Trichloroethane	79-00-5	ug/L	5	0.59			40 U	50 U
1,1-Dichloroethane	75-34-3	ug/L					40 U	50 U
1,1-Dichloroethene	75-35-4	ug/L	7	7			40 U	50 U
1,1-Dichloropropene	563-58-6	ug/L					40 U	50 U
1,2,3-Trichlorobenzene	87-61-6	ug/L					40 U	50 U
1,2,3-Trichloropropane	96-18-4	ug/L					40 U	50 U
1,2,4-Trichlorobenzene	120-82-1	ug/L	70				40 U	50 U

Blacktail Creek Spill Final EPA Water Sampling Results								
						SampID:	BT-PW-01	BT-PW-02
						SampDate:	1/24/2015	1/25/2015
						SampTime:	14:20	10:20
Analyte	CAS_NO	Units	EPA MCL	ND Stream Class I and II HHV	ND WQS Acute Standard[1]	ND WQS Chronic Standard[2]	Produced Water[7]: Moline 2H and Moline 3H Well Pad	Produced Water[7]: State 1H Well Pad
1,2,4-Trimethylbenzene	95-63-6	ug/L					40 U	50 U
1,2-Dibromo-3-chloropropane	96-12-8	ug/L	0.2				200 U	250 U
1,2-Dibromoethane	106-93-4	ug/L	0.05				40 U	50 U
1,2-Dichlorobenzene	95-50-1	ug/L		420			40 U	50 U
1,2-Dichloroethane	107-06-2	ug/L	5	0.38			40 U	50 U
1,2-Dichloropropane	78-87-5	ug/L	5	0.5			40 U	50 U
1,3,5-Trimethylbenzene	108-67-8	ug/L					40 U	50 U
1,3-Dichlorobenzene	541-73-1	ug/L		320			40 U	50 U
1,3-Dichloropropane	142-28-9	ug/L					40 U	50 U
1,4-Dichlorobenzene	106-46-7	ug/L		63			40 U	50 U
2,2-Dichloropropane	594-20-7	ug/L					40 U	50 U
2-Butanone	78-93-3	ug/L					1000 U	1250 U
2-Chlorotoluene	95-49-8	ug/L					40 U	50 U
2-Hexanone	591-78-6	ug/L					200 U	250 U
4-Chlorotoluene	106-43-4	ug/L					40 U	50 U
4-Isopropyltoluene	99-87-6	ug/L					40 U	50 U
4-Methyl-2-pentanone	108-10-1	ug/L					200 U	250 U
Acetone	67-64-1	ug/L					1000 U	1250 U
Benzene	71-43-2	ug/L	5	2.2			**446**	**989**
Bromobenzene	108-86-1	ug/L					40 U	50 U
Bromochloromethane	74-97-5	ug/L					40 U	50 U
Bromodichloromethane	75-27-4	ug/L	80				40 U	50 U
Bromoform	75-25-2	ug/L	80	4.3			40 U	50 U
Bromomethane	74-83-9	ug/L					40 U	50 U
Carbon disulfide	75-15-0	ug/L					40 U	50 U

Blacktail Creek Spill Final EPA Water Sampling Results								
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						SampDate:	1/24/2015	1/25/2015
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Analyte	CAS_NO	Units	EPA MCL	ND Stream Class I and II HHV	ND WQS Acute Standard[1]	ND WQS Chronic Standard[2]	Produced Water[7]: Moline 2H and Moline 3H Well Pad	Produced Water[7]: State 1H Well Pad
Carbon tetrachloride	56-23-5	ug/L	5	0.23			40 U	50 U
Chlorobenzene	108-90-7	ug/L	100	100			40 U	50 U
Chloroethane	75-00-3	ug/L					40 U	50 U
Chloroform	67-66-3	ug/L	80	5.7			40 U	50 U
Chloromethane	74-87-3	ug/L					40 U	50 U
cis-1,2-Dichloroethene	156-59-2	ug/L	70	70			40 U	50 U
cis-1,3-Dichloropropene	10061-01-5	ug/L					40 U	50 U
Dibromochloromethane	124-48-1	ug/L	80				40 U	50 U
Dibromomethane	74-95-3	ug/L					40 U	50 U
Dichlorodifluoromethane	75-71-8	ug/L					200 U	250 U
Diisopropyl Ether	108-20-3	ug/L					40 U	50 U
Ethyl Benzene	100-41-4	ug/L	700	530			40 U	50 U
Hexachlorobutadiene	87-68-3	ug/L		0.44			40 U	50 U
Isopropylbenzene (Cumene)	98-82-8	ug/L					40 U	50 U
m,p-Xylene	136777-61-2	ug/L					80 U	100 U
Methyl iodide	74-88-4	ug/L					40 U	50 U
Methylene chloride	75-09-2	ug/L	5	4.6			200 U	250 U
Naphthalene	91-20-3	ug/L					40 U	50 U
n-Butylbenzene	104-51-8	ug/L					40 U	50 U
n-Propylbenzene	103-65-1	ug/L					40 U	50 U
o-Xylene	95-47-6	ug/L					40 U	59.5
sec-Butylbenzene	135-98-8	ug/L					40 U	50 U
Styrene	100-42-5	ug/L	100	100			40 U	50 U
tert-Butyl methyl ether (MTBE)	1634-04-4	ug/L					40 U	50 U
tert-Butylbenzene	98-06-6	ug/L					40 U	50 U

Blacktail Creek Spill Final EPA Water Sampling Results								
						SampID:	BT-PW-01	BT-PW-02
						SampDate:	1/24/2015	1/25/2015
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Analyte	**CAS_NO**	**Units**	**EPA MCL**	**ND Stream Class I and II HHV**	**ND WQS Acute Standard[1]**	**ND WQS Chronic Standard[2]**	**Produced Water[7]: Moline 2H and Moline 3H Well Pad**	**Produced Water[7]: State 1H Well Pad**
Tetrachloroethene	127-18-4	ug/L	5	0.69			40 U	50 U
Toluene	108-88-3	ug/L	1000	1000			208	566
trans-1,2-Dichloroethene	156-60-5	ug/L	100				40 U	50 U
trans-1,3-Dichloropropene	10061-02-6	ug/L					40 U	50 U
trans-1,4-Dichloro-2-butene	110-57-6	ug/L					200 U	250 U
Trichloroethene	79-01-6	ug/L	5	2.5			40 U	50 U
Trichlorofluoromethane	75-69-4	ug/L					40 U	50 U
Vinyl chloride	75-01-4	ug/L	2	0.025			40 U	50 U
Xylene (total)	1330-20-7	ug/L	10000	10000			80 U	149

U: analyte not detected at or above Method Detection Limit

J: result is estimated due to analysis outside of method holding time

Bold: result exceeds one or more benchmarks

1: one-hour average standard set at value which results should not exceed more than once every 3 years

2: 30-day average standard set at value which result should not exceed more than once every 3 years

3: standard for Class I and II Streams (Little Muddy = Class II), Class III Stream standard is 750 mg/L

4: standard for Class II and III Streams (Little Muddy = Class II), Class I Stream standard is 175 mg/L

5: standard range displayed was calculated using the ND Acute standard formula for ammonia at a pH values between 4.7 and 10.13

6: standard range displayed was calculated using the ND Chronic standard formula for ammonia at a pH values between 7.9 and 8.3

7: produced water well samples pulled from 2 out of 37 wells that are manifolded with the produced water line

Note: all results have undergone a Level II Data Validation