



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08060403-010
Client Sample ID: WB, 0-2 Inches

Report Date: 07/24/08
Collection Date: 06/03/08 17:00
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	14	%		1		ASA15-5	06/17/08 14:50 / srm
Silt	55	%		1		ASA15-5	06/17/08 14:50 / srm
Clay	31	%		1		ASA15-5	06/17/08 14:50 / srm
Texture	SiCL					ASA15-5	06/17/08 14:50 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.30	s.u.		0.10		ASAM10-3.2	06/17/08 14:50 / srm
Conductivity, sat. paste	0.85	mmhos/cm		0.01		ASA10-3	06/18/08 14:43 / srm
Saturation	69.4	%		0.1		USDA27a	06/18/08 14:43 / srm
Calcium, sat. paste	4.86	meq/L		0.05		SW6010B	06/19/08 12:52 / rlh
Magnesium, sat. paste	3.68	meq/L		0.08		SW6010B	06/19/08 12:52 / rlh
Sodium, sat. paste	0.77	meq/L		0.04		SW6010B	06/19/08 12:52 / rlh
Sodium Adsorption Ratio (SAR)	0.37	unitless		0.01		Calculation	06/19/08 14:47 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	1.1	%		0.1		USDA23c	06/17/08 14:50 / srm
EXCHANGEABLES							
Cation Exchange Capacity	37.3	meq/100g	D	0.08		SW6010B	06/12/08 18:15 / rlh
Exchangeable Sodium Percentage	0.27	%		0.01		USDA20a	06/19/08 14:47 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.15	meq/100g	D	0.00039		SW6010B	06/11/08 01:31 / rlh

Report Definitions:

RL - Analyte reporting limit.
 QCL - Quality control limit.
 D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08060403-011
Client Sample ID: WB, 0-6 Inches

Report Date: 07/24/08
Collection Date: 06/03/08 17:00
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	15	%		1		ASA15-5	06/17/08 14:50 / srm
Silt	52	%		1		ASA15-5	06/17/08 14:50 / srm
Clay	33	%		1		ASA15-5	06/17/08 14:50 / srm
Texture	SiCL					ASA15-5	06/17/08 14:50 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.40	s.u.		0.10		ASAM10-3.2	06/17/08 14:50 / srm
Conductivity, sat. paste	0.68	mmhos/cm		0.01		ASA10-3	06/18/08 14:43 / srm
Saturation	70.6	%		0.1		USDA27a	06/18/08 14:43 / srm
Calcium, sat. paste	3.56	meq/L		0.05		SW6010B	06/19/08 12:56 / rlh
Magnesium, sat. paste	2.92	meq/L		0.08		SW6010B	06/19/08 12:56 / rlh
Sodium, sat. paste	0.80	meq/L		0.04		SW6010B	06/19/08 12:56 / rlh
Sodium Adsorption Ratio (SAR)	0.44	unitless		0.01		Calculation	06/19/08 14:47 / srm
Sulfate	2.84	meq/L		0.02		ASA10-3	06/18/08 14:45 / qed
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	1.1	%		0.1		USDA23c	06/17/08 14:50 / srm
Phosphorus, Olsen	4	mg/kg		1		ASA24-5	06/13/08 13:12 / srm
Nitrate as N, KCL Extract	2	mg/kg		1		ASA33-8	06/13/08 15:00 / srm
Organic Matter	3.55	%		0.02		ASA29-3	06/13/08 14:25 / srm
EXCHANGEABLES							
Cation Exchange Capacity	35.7	meq/100g	D	0.08		SW6010B	06/12/08 18:18 / rlh
Exchangeable Sodium Percentage	0.31	%		0.01		USDA20a	06/19/08 14:47 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.17	meq/100g	D	0.00039		SW6010B	06/11/08 01:35 / rlh
Potassium, available	226	mg/kg	D	0.13		SW6010B	06/11/08 01:35 / rlh
METALS, DTPA EXTRACTABLE							
Zinc	1.0	mg/kg		0.1		SW6010B	06/13/08 21:32 / rlh

Report Definitions:

RL - Analyte reporting limit.

QCL - Quality control limit.

D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08060403-012
Client Sample ID: WB, 6-12 Inches

Report Date: 07/24/08
Collection Date: 06/03/08 17:00
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	14	%		1		ASA15-5	06/17/08 14:50 / srm
Silt	53	%		1		ASA15-5	06/17/08 14:50 / srm
Clay	33	%		1		ASA15-5	06/17/08 14:50 / srm
Texture	SiCL					ASA15-5	06/17/08 14:50 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.40	s.u.		0.10		ASAM10-3.2	06/17/08 14:50 / srm
Conductivity, sat. paste	1.43	mmhos/cm		0.01		ASA10-3	06/18/08 14:43 / srm
Saturation	55.7	%		0.1		USDA27a	06/18/08 14:43 / srm
Calcium, sat. paste	7.88	meq/L		0.05		SW6010B	06/19/08 13:11 / rlh
Magnesium, sat. paste	7.32	meq/L		0.08		SW6010B	06/19/08 13:11 / rlh
Sodium, sat. paste	2.17	meq/L		0.04		SW6010B	06/19/08 13:11 / rlh
Sodium Adsorption Ratio (SAR)	0.79	unitless		0.01		Calculation	06/19/08 14:47 / srm
Sulfate	13.8	meq/L	D	0.1		ASA10-3	06/18/08 15:08 / qed
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	1.2	%		0.1		USDA23c	06/17/08 14:50 / srm
Nitrate as N, KCL Extract	2	mg/kg		1		ASA33-8	06/13/08 15:01 / srm
EXCHANGEABLES							
Cation Exchange Capacity	33.2	meq/100g	D	0.08		SW6010B	06/12/08 18:34 / rlh
Exchangeable Sodium Percentage	0.64	%		0.01		USDA20a	06/19/08 14:47 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.33	meq/100g	D	0.00039		SW6010B	06/11/08 01:50 / rlh

Report Definitions:

RL - Analyte reporting limit.

QCL - Quality control limit.

D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08060403-013
Client Sample ID: WB, 12-24 Inches

Report Date: 07/24/08
Collection Date: 06/03/08 17:00
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	11	%		1		ASA15-5	06/17/08 14:50 / srm
Silt	54	%		1		ASA15-5	06/17/08 14:50 / srm
Clay	35	%		1		ASA15-5	06/17/08 14:50 / srm
Texture	SiCL					ASA15-5	06/17/08 14:50 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.90	s.u.		0.10		ASAM10-3.2	06/17/08 14:50 / srm
Conductivity, sat. paste	1.66	mmhos/cm		0.01		ASA10-3	06/18/08 14:43 / srm
Saturation	54.3	%		0.1		USDA27a	06/18/08 14:43 / srm
Calcium, sat. paste	7.40	meq/L		0.05		SW6010B	06/19/08 13:15 / rlh
Magnesium, sat. paste	9.57	meq/L		0.08		SW6010B	06/19/08 13:15 / rlh
Sodium, sat. paste	3.32	meq/L		0.04		SW6010B	06/19/08 13:15 / rlh
Sodium Adsorption Ratio (SAR)	1.14	unitless		0.01		Calculation	06/19/08 14:47 / srm
Sulfate	17.9	meq/L	D	0.1		ASA10-3	06/18/08 15:20 / qed
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	5.3	%		0.1		USDA23c	06/17/08 14:50 / srm
Nitrate as N, KCL Extract	1	mg/kg		1		ASA33-8	06/13/08 15:02 / srm
EXCHANGEABLES							
Cation Exchange Capacity	30.9	meq/100g	D	0.08		SW6010B	06/12/08 18:41 / rlh
Exchangeable Sodium Percentage	1.00	%		0.01		USDA20a	06/19/08 14:47 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.49	meq/100g	D	0.00039		SW6010B	06/11/08 01:58 / rlh

Report Definitions:

RL - Analyte reporting limit.
 QCL - Quality control limit.
 D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08060403-014
Client Sample ID: WB, 24-36 Inches

Report Date: 07/24/08
Collection Date: 06/03/08 17:00
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	17	%		1		ASA15-5	06/17/08 14:50 / srm
Silt	50	%		1		ASA15-5	06/17/08 14:50 / srm
Clay	33	%		1		ASA15-5	06/17/08 14:50 / srm
Texture	SiCL					ASA15-5	06/17/08 14:50 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.90	s.u.		0.10		ASAM10-3.2	06/17/08 14:50 / srm
Conductivity, sat. paste	4.56	mmhos/cm		0.01		ASA10-3	06/18/08 14:43 / srm
Saturation	50.9	%		0.1		USDA27a	06/18/08 14:43 / srm
Calcium, sat. paste	25.2	meq/L		0.05		SW6010B	06/18/08 19:21 / rlh
Magnesium, sat. paste	43.5	meq/L		0.08		SW6010B	06/18/08 19:21 / rlh
Sodium, sat. paste	10.0	meq/L		0.04		SW6010B	06/18/08 19:21 / rlh
Sodium Adsorption Ratio (SAR)	1.71	unitless		0.01		Calculation	06/19/08 14:47 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	11.3	%		0.1		USDA23c	06/17/08 14:50 / srm
EXCHANGEABLES							
Cation Exchange Capacity	25.2	meq/100g	D	0.08		SW6010B	06/12/08 18:45 / rlh
Exchangeable Sodium Percentage	1.22	%		0.01		USDA20a	06/19/08 14:47 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.82	meq/100g	D	0.00039		SW6010B	06/11/08 02:02 / rlh

Report Definitions:

RL - Analyte reporting limit.
 QCL - Quality control limit.
 D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08060403-015
Client Sample ID: WB, 36-48 Inches

Report Date: 07/24/08
Collection Date: 06/03/08 17:00
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	21	%		1		ASA15-5	06/17/08 14:50 / srm
Silt	48	%		1		ASA15-5	06/17/08 14:50 / srm
Clay	31	%		1		ASA15-5	06/17/08 14:50 / srm
Texture	CL					ASA15-5	06/17/08 14:50 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.80	s.u.		0.10		ASAM10-3.2	06/17/08 14:50 / srm
Conductivity, sat. paste	3.93	mmhos/cm		0.01		ASA10-3	06/18/08 14:43 / srm
Saturation	46.8	%		0.1		USDA27a	06/18/08 14:43 / srm
Calcium, sat. paste	25.8	meq/L		0.05		SW6010B	06/18/08 19:29 / rlh
Magnesium, sat. paste	31.7	meq/L		0.08		SW6010B	06/18/08 19:29 / rlh
Sodium, sat. paste	5.56	meq/L		0.04		SW6010B	06/18/08 19:29 / rlh
Sodium Adsorption Ratio (SAR)	1.04	unitless		0.01		Calculation	06/19/08 14:47 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	11.1	%		0.1		USDA23c	06/17/08 14:50 / srm
EXCHANGEABLES							
Cation Exchange Capacity	23.6	meq/100g	D	0.08		SW6010B	06/12/08 18:49 / rlh
Exchangeable Sodium Percentage	0.95	%		0.01		USDA20a	06/19/08 14:47 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.48	meq/100g	D	0.00039		SW6010B	06/11/08 02:05 / rlh

Report Definitions:

RL - Analyte reporting limit.

QCL - Quality control limit.

D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08060403-016
Client Sample ID: WB, 48-60 Inches

Report Date: 07/24/08
Collection Date: 06/03/08 17:00
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	27	%		1		ASA15-5	06/17/08 14:50 / srm
Silt	44	%		1		ASA15-5	06/17/08 14:50 / srm
Clay	29	%		1		ASA15-5	06/17/08 14:50 / srm
Texture	CL					ASA15-5	06/17/08 14:50 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.80	s.u.		0.10		ASAM10-3.2	06/17/08 14:50 / srm
Conductivity, sat. paste	3.68	mmhos/cm		0.01		ASA10-3	06/18/08 14:43 / srm
Saturation	44.2	%		0.1		USDA27a	06/18/08 14:43 / srm
Calcium, sat. paste	26.6	meq/L		0.05		SW6010B	06/18/08 19:32 / rlh
Magnesium, sat. paste	27.9	meq/L		0.08		SW6010B	06/18/08 19:32 / rlh
Sodium, sat. paste	4.17	meq/L		0.04		SW6010B	06/18/08 19:32 / rlh
Sodium Adsorption Ratio (SAR)	0.80	unitless		0.01		Calculation	06/19/08 14:47 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	10.1	%		0.1		USDA23c	06/17/08 14:50 / srm
EXCHANGEABLES							
Cation Exchange Capacity	22.1	meq/100g	D	0.08		SW6010B	06/12/08 18:52 / rlh
Exchangeable Sodium Percentage	0.83	%		0.01		USDA20a	06/19/08 14:47 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.37	meq/100g	D	0.00039		SW6010B	06/11/08 02:09 / rlh

Report Definitions:

RL - Analyte reporting limit.
 QCL - Quality control limit.
 D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08060403-017
Client Sample ID: WB, 60-72 Inches

Report Date: 07/24/08
Collection Date: 06/03/08 17:00
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	29	%		1		ASA15-5	06/17/08 14:50 / srm
Silt	42	%		1		ASA15-5	06/17/08 14:50 / srm
Clay	29	%		1		ASA15-5	06/17/08 14:50 / srm
Texture	CL					ASA15-5	06/17/08 14:50 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.70	s.u.		0.10		ASAM10-3.2	06/17/08 14:50 / srm
Conductivity, sat. paste	3.36	mmhos/cm		0.01		ASA10-3	06/18/08 14:43 / srm
Saturation	45.4	%		0.1		USDA27a	06/18/08 14:43 / srm
Calcium, sat. paste	27.4	meq/L		0.05		SW6010B	06/18/08 19:36 / rlh
Magnesium, sat. paste	23.1	meq/L		0.08		SW6010B	06/18/08 19:36 / rlh
Sodium, sat. paste	2.47	meq/L		0.04		SW6010B	06/18/08 19:36 / rlh
Sodium Adsorption Ratio (SAR)	0.49	unitless		0.01		Calculation	06/19/08 14:47 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	10.6	%		0.1		USDA23c	06/17/08 14:50 / srm
EXCHANGEABLES							
Cation Exchange Capacity	21.7	meq/100g	D	0.08		SW6010B	06/12/08 18:56 / rlh
Exchangeable Sodium Percentage	0.57	%		0.01		USDA20a	06/19/08 14:47 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.23	meq/100g	D	0.00039		SW6010B	06/11/08 02:13 / rlh

Report Definitions:

RL - Analyte reporting limit.

QCL - Quality control limit.

D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08060403-018
Client Sample ID: WB, 72-96 Inches

Report Date: 07/24/08
Collection Date: 06/03/08 17:00
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	24	%		1		ASA15-5	06/17/08 14:50 / srm
Silt	47	%		1		ASA15-5	06/17/08 14:50 / srm
Clay	29	%		1		ASA15-5	06/17/08 14:50 / srm
Texture	CL					ASA15-5	06/17/08 14:50 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	8.00	s.u.		0.10		ASAM10-3.2	06/17/08 14:50 / srm
Conductivity, sat. paste	1.59	mmhos/cm		0.01		ASA10-3	06/18/08 14:43 / srm
Saturation	48.0	%		0.1		USDA27a	06/18/08 14:43 / srm
Calcium, sat. paste	8.79	meq/L		0.05		SW6010B	06/18/08 19:40 / rlh
Magnesium, sat. paste	8.46	meq/L		0.08		SW6010B	06/18/08 19:40 / rlh
Sodium, sat. paste	1.71	meq/L		0.04		SW6010B	06/18/08 19:40 / rlh
Sodium Adsorption Ratio (SAR)	0.58	unitless		0.01		Calculation	06/19/08 14:47 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	7.9	%		0.1		USDA23c	06/17/08 14:50 / srm
EXCHANGEABLES							
Cation Exchange Capacity	25.8	meq/100g	D	0.08		SW6010B	06/12/08 19:00 / rlh
Exchangeable Sodium Percentage	0.53	%		0.01		USDA20a	06/19/08 14:47 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.22	meq/100g	D	0.00039		SW6010B	06/11/08 02:17 / rlh

Report Definitions:

RL - Analyte reporting limit.
 QCL - Quality control limit.
 D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.