



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08060394-001
Client Sample ID: WD, 0-2 Inches

Report Date: 07/22/08
Collection Date: 06/03/08 10:30
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	20	%		1		ASA15-5	06/13/08 14:24 / srm
Silt	51	%		1		ASA15-5	06/13/08 14:24 / srm
Clay	29	%		1		ASA15-5	06/13/08 14:24 / srm
Texture	SiCL					ASA15-5	06/13/08 14:24 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	6.00	s.u.		0.10		ASAM10-3.2	06/13/08 13:47 / srm
Conductivity, sat. paste	1.22	mmhos/cm		0.01		ASA10-3	06/13/08 13:47 / srm
Saturation	58.9	%		0.1		USDA27a	06/13/08 13:47 / srm
Calcium, sat. paste	6.40	meq/L		0.05		SW6010B	06/12/08 14:28 / rlh
Magnesium, sat. paste	4.82	meq/L		0.08		SW6010B	06/12/08 14:28 / rlh
Sodium, sat. paste	0.28	meq/L		0.04		SW6010B	06/12/08 14:28 / rlh
Sodium Adsorption Ratio (SAR)	0.12	unitless		0.01		Calculation	06/13/08 13:47 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	0.7	%		0.1		USDA23c	06/13/08 14:24 / srm
EXCHANGEABLES							
Cation Exchange Capacity	40.5	meq/100g	D	0.08		SW6010B	06/11/08 15:55 / rlh
Exchangeable Sodium Percentage	0.09	%		0.01		USDA20a	06/16/08 08:33 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.054	meq/100g	D	0.00039		SW6010B	06/10/08 21:50 / 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: B08060394-002
Client Sample ID: WD, 0-6 Inches

Report Date: 07/22/08
Collection Date: 06/03/08 10:30
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	06/13/08 14:24 / srm
Silt	54	%		1		ASA15-5	06/13/08 14:24 / srm
Clay	32	%		1		ASA15-5	06/13/08 14:24 / srm
Texture	SiCL					ASA15-5	06/13/08 14:24 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	6.60	s.u.		0.10		ASAM10-3.2	06/13/08 13:47 / srm
Conductivity, sat. paste	2.60	mmhos/cm		0.01		ASA10-3	06/13/08 13:47 / srm
Saturation	54.0	%		0.1		USDA27a	06/13/08 13:47 / srm
Calcium, sat. paste	18.9	meq/L		0.05		SW6010B	06/12/08 14:35 / rlh
Magnesium, sat. paste	14.0	meq/L		0.08		SW6010B	06/12/08 14:35 / rlh
Sodium, sat. paste	0.64	meq/L		0.04		SW6010B	06/12/08 14:35 / rlh
Sodium Adsorption Ratio (SAR)	0.16	unitless		0.01		Calculation	06/13/08 13:47 / srm
Sulfate	30.3	meq/L	D	0.1		ASA10-3	06/12/08 15:09 / qed
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	1.0	%		0.1		USDA23c	06/13/08 14:24 / srm
Phosphorus, Olsen	14	mg/kg		1		ASA24-5	06/13/08 13:04 / srm
Nitrate as N, KCL Extract	2	mg/kg		1		ASA33-8	06/13/08 14:48 / srm
Organic Matter	4.43	%		0.02		ASA29-3	06/13/08 14:26 / srm
EXCHANGEABLES							
Cation Exchange Capacity	36.2	meq/100g	D	0.08		SW6010B	06/11/08 16:03 / rlh
Exchangeable Sodium Percentage	0.14	%		0.01		USDA20a	06/16/08 08:33 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.084	meq/100g	D	0.00039		SW6010B	06/10/08 21:58 / rlh
Potassium, available	578	mg/kg	D	0.13		SW6010B	06/10/08 21:58 / rlh
METALS, DTPA EXTRACTABLE							
Zinc	1.3	mg/kg		0.1		SW6010B	06/13/08 21:10 / rlh

Report Definitions:

RL - Analyte reporting limit.
 QCL - Quality control limit.
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MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08060394-003
Client Sample ID: WD, 6-12 Inches

Report Date: 07/22/08
Collection Date: 06/03/08 10:30
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	10	%		1		ASA15-5	06/13/08 14:24 / srm
Silt	52	%		1		ASA15-5	06/13/08 14:24 / srm
Clay	38	%		1		ASA15-5	06/13/08 14:24 / srm
Texture	SiCL					ASA15-5	06/13/08 14:24 / 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	06/13/08 13:47 / srm
Conductivity, sat. paste	0.90	mmhos/cm		0.01		ASA10-3	06/13/08 13:47 / srm
Saturation	53.7	%		0.1		USDA27a	06/13/08 13:47 / srm
Calcium, sat. paste	4.87	meq/L		0.05		SW6010B	06/12/08 14:43 / rlh
Magnesium, sat. paste	3.97	meq/L		0.08		SW6010B	06/12/08 14:43 / rlh
Sodium, sat. paste	0.36	meq/L		0.04		SW6010B	06/12/08 14:43 / rlh
Sodium Adsorption Ratio (SAR)	0.17	unitless		0.01		Calculation	06/13/08 13:47 / srm
Sulfate	4.84	meq/L		0.02		ASA10-3	06/12/08 15:20 / qed
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	1.2	%		0.1		USDA23c	06/13/08 14:24 / srm
Nitrate as N, KCL Extract	2	mg/kg		1		ASA33-8	06/13/08 14:50 / srm
EXCHANGEABLES							
Cation Exchange Capacity	34.7	meq/100g	D	0.08		SW6010B	06/11/08 16:10 / rlh
Exchangeable Sodium Percentage	0.15	%		0.01		USDA20a	06/16/08 08:33 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.071	meq/100g	D	0.00039		SW6010B	06/10/08 22:05 / rlh

Report Definitions:

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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: B08060394-004
Client Sample ID: WD, 12-24 Inches

Report Date: 07/22/08
Collection Date: 06/03/08 10:30
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	8	%		1		ASA15-5	06/13/08 14:24 / srm
Silt	53	%		1		ASA15-5	06/13/08 14:24 / srm
Clay	39	%		1		ASA15-5	06/13/08 14:24 / srm
Texture	SiCL					ASA15-5	06/13/08 14:24 / 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	06/13/08 13:47 / srm
Conductivity, sat. paste	3.05	mmhos/cm		0.01		ASA10-3	06/13/08 13:47 / srm
Saturation	51.0	%		0.1		USDA27a	06/13/08 13:47 / srm
Calcium, sat. paste	26.4	meq/L		0.05		SW6010B	06/12/08 14:46 / rlh
Magnesium, sat. paste	17.4	meq/L		0.08		SW6010B	06/12/08 14:46 / rlh
Sodium, sat. paste	1.17	meq/L		0.04		SW6010B	06/12/08 14:46 / rlh
Sodium Adsorption Ratio (SAR)	0.25	unitless		0.01		Calculation	06/13/08 13:47 / srm
Sulfate	46.1	meq/L	D	0.2		ASA10-3	06/12/08 15:32 / qed
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	5.4	%		0.1		USDA23c	06/13/08 14:24 / srm
Nitrate as N, KCL Extract	1	mg/kg		1		ASA33-8	06/13/08 14:51 / srm
EXCHANGEABLES							
Cation Exchange Capacity	29.9	meq/100g	D	0.08		SW6010B	06/11/08 16:22 / rlh
Exchangeable Sodium Percentage	0.29	%		0.01		USDA20a	06/16/08 08:33 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.15	meq/100g	D	0.00039		SW6010B	06/10/08 22:09 / rlh

Report Definitions:

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ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08060394-005
Client Sample ID: WD, 24-36 Inches

Report Date: 07/22/08
Collection Date: 06/03/08 10:30
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	16	%		1		ASA15-5	06/13/08 14:24 / srm
Silt	51	%		1		ASA15-5	06/13/08 14:24 / srm
Clay	33	%		1		ASA15-5	06/13/08 14:24 / srm
Texture	SiCL					ASA15-5	06/13/08 14:24 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.50	s.u.		0.10		ASAM10-3.2	06/13/08 13:47 / srm
Conductivity, sat. paste	3.58	mmhos/cm		0.01		ASA10-3	06/13/08 13:47 / srm
Saturation	50.2	%		0.1		USDA27a	06/13/08 13:47 / srm
Calcium, sat. paste	28.3	meq/L		0.05		SW6010B	06/12/08 14:50 / rlh
Magnesium, sat. paste	24.2	meq/L		0.08		SW6010B	06/12/08 14:50 / rlh
Sodium, sat. paste	4.48	meq/L		0.04		SW6010B	06/12/08 14:50 / rlh
Sodium Adsorption Ratio (SAR)	0.87	unitless		0.01		Calculation	06/13/08 13:47 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	3.6	%		0.1		USDA23c	06/13/08 14:24 / srm
EXCHANGEABLES							
Cation Exchange Capacity	28.8	meq/100g	D	0.08		SW6010B	06/11/08 16:25 / rlh
Exchangeable Sodium Percentage	0.65	%		0.01		USDA20a	06/16/08 08:33 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.41	meq/100g	D	0.00039		SW6010B	06/10/08 22:20 / 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: B08060394-006
Client Sample ID: WD, 36-48 Inches

Report Date: 07/22/08
Collection Date: 06/03/08 10:30
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	6	%		1		ASA15-5	06/13/08 14:24 / srm
Silt	59	%		1		ASA15-5	06/13/08 14:24 / srm
Clay	35	%		1		ASA15-5	06/13/08 14:24 / srm
Texture	SiCL					ASA15-5	06/13/08 14:24 / 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	06/13/08 13:47 / srm
Conductivity, sat. paste	4.49	mmhos/cm		0.01		ASA10-3	06/13/08 13:47 / srm
Saturation	51.8	%		0.1		USDA27a	06/13/08 13:47 / srm
Calcium, sat. paste	24.7	meq/L		0.05		SW6010B	06/12/08 14:54 / rlh
Magnesium, sat. paste	35.6	meq/L		0.08		SW6010B	06/12/08 14:54 / rlh
Sodium, sat. paste	13.9	meq/L		0.04		SW6010B	06/12/08 14:54 / rlh
Sodium Adsorption Ratio (SAR)	2.54	unitless		0.01		Calculation	06/13/08 13:47 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	6.7	%		0.1		USDA23c	06/13/08 14:24 / srm
EXCHANGEABLES							
Cation Exchange Capacity	28.1	meq/100g	D	0.08		SW6010B	06/11/08 16:29 / rlh
Exchangeable Sodium Percentage	1.87	%		0.01		USDA20a	06/16/08 08:33 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	1.2	meq/100g	D	0.00039		SW6010B	06/10/08 22:24 / 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: B08060394-007
 Client Sample ID: WD, 48-60 Inches

Report Date: 07/22/08
 Collection Date: 06/03/08 10:30
 Date Received: 06/04/08
 Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	8	%		1		ASA15-5	06/13/08 14:24 / srm
Silt	61	%		1		ASA15-5	06/13/08 14:24 / srm
Clay	31	%		1		ASA15-5	06/13/08 14:24 / srm
Texture	SiCL					ASA15-5	06/13/08 14:24 / 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	06/13/08 13:47 / srm
Conductivity, sat. paste	5.22	mmhos/cm		0.01		ASA10-3	06/13/08 13:47 / srm
Saturation	50.4	%		0.1		USDA27a	06/13/08 13:47 / srm
Calcium, sat. paste	24.7	meq/L	D	0.1		SW6010B	06/12/08 14:58 / rlh
Magnesium, sat. paste	43.7	meq/L	D	0.1		SW6010B	06/12/08 14:58 / rlh
Sodium, sat. paste	19.7	meq/L	D	0.08		SW6010B	06/12/08 14:58 / rlh
Sodium Adsorption Ratio (SAR)	3.37	unitless		0.01		Calculation	06/13/08 13:47 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	6.6	%		0.1		USDA23c	06/13/08 14:24 / srm
EXCHANGEABLES							
Cation Exchange Capacity	26.5	meq/100g	D	0.08		SW6010B	06/11/08 16:33 / rlh
Exchangeable Sodium Percentage	2.80	%		0.01		USDA20a	06/16/08 08:33 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	1.7	meq/100g	D	0.00039		SW6010B	06/10/08 22:28 / 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: B08060394-008
Client Sample ID: WD, 60-72 Inches

Report Date: 07/22/08
Collection Date: 06/03/08 10:30
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	10	%		1		ASA15-5	06/13/08 14:24 / srm
Silt	57	%		1		ASA15-5	06/13/08 14:24 / srm
Clay	33	%		1		ASA15-5	06/13/08 14:24 / srm
Texture	SiCL					ASA15-5	06/13/08 14:24 / 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	06/13/08 13:47 / srm
Conductivity, sat. paste	6.02	mmhos/cm		0.01		ASA10-3	06/13/08 13:47 / srm
Saturation	49.7	%		0.1		USDA27a	06/13/08 13:47 / srm
Calcium, sat. paste	23.1	meq/L	D	0.1		SW6010B	06/12/08 15:09 / rlh
Magnesium, sat. paste	56.5	meq/L	D	0.1		SW6010B	06/12/08 15:09 / rlh
Sodium, sat. paste	26.3	meq/L	D	0.08		SW6010B	06/12/08 15:09 / rlh
Sodium Adsorption Ratio (SAR)	4.17	unitless		0.01		Calculation	06/13/08 13:47 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	4.9	%		0.1		USDA23c	06/13/08 14:24 / srm
EXCHANGEABLES							
Cation Exchange Capacity	30.7	meq/100g	D	0.08		SW6010B	06/11/08 16:37 / rlh
Exchangeable Sodium Percentage	2.38	%		0.01		USDA20a	06/16/08 08:33 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	2.0	meq/100g	D	0.00039		SW6010B	06/10/08 22:32 / 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: B08060394-009
Client Sample ID: WD, 72-96 Inches

Report Date: 07/22/08
Collection Date: 06/03/08 10:30
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	12	%		1		ASA15-5	06/13/08 14:24 / srm
Silt	56	%		1		ASA15-5	06/13/08 14:24 / srm
Clay	32	%		1		ASA15-5	06/13/08 14:24 / srm
Texture	SiCL					ASA15-5	06/13/08 14:24 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	8.10	s.u.		0.10		ASAM10-3.2	06/13/08 13:47 / srm
Conductivity, sat. paste	5.98	mmhos/cm		0.01		ASA10-3	06/13/08 13:47 / srm
Saturation	48.3	%		0.1		USDA27a	06/13/08 13:47 / srm
Calcium, sat. paste	23.5	meq/L	D	0.1		SW6010B	06/12/08 15:13 / rlh
Magnesium, sat. paste	55.1	meq/L	D	0.1		SW6010B	06/12/08 15:13 / rlh
Sodium, sat. paste	27.9	meq/L	D	0.08		SW6010B	06/12/08 15:13 / rlh
Sodium Adsorption Ratio (SAR)	4.45	unitless		0.01		Calculation	06/13/08 13:47 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	5.8	%		0.1		USDA23c	06/13/08 14:24 / srm
EXCHANGEABLES							
Cation Exchange Capacity	28.4	meq/100g	D	0.08		SW6010B	06/11/08 16:40 / rlh
Exchangeable Sodium Percentage	2.37	%		0.01		USDA20a	06/16/08 08:33 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	2.0	meq/100g	D	0.00039		SW6010B	06/10/08 22:36 / 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.