COPY

ENERGYSOLUTIONS

Daily Report
Lift Thickness Verification
Compaction & Moisture Data

ENERGYSOLUTIONS

DAILY CONSTRUCTION REPORT

PROJECT: MOAB UMTRA **Site:** Crescent Junction **Shift:** Nights

DATE: 5·27·2010

WEATHER: Fair: X Cloudy: ____ Warm: ____ Rain: ____ Snow: ____ Wind: ____ Other: ____

CONSTRUCTION OPERATIONS: Waste Placement X Cell Excavation ____ Interim Cover ____
Radon Barrier ____ Rock Placement ____ Other ____

Others ____

EQUIPMENT USED:

Rock trucks X	Track hoes ____	Loaders X	Dozers X
Locomotives ____	Forklifts ____	Graders ____	Backhoes ____
Sheepsfoot ____	Scrapers ____	Tillers ____	Rollers ____
CAT 815 ____	Water trucks X	CAT 825 X	Other ____

DAILY PROGRESS MEETING: Yes X No ____

LIFTS TESTED: UWE01100526-00, UWL07100527-00 and UWA01100527-00

LIFTS APPROVED: UWE01100526-00, UWL07100527-00 and UWA01100527-00

EXPLANATIONS:

A total of 3 lifts were approved tonight, approximately 7781 cubic yds were approved tonight. The daily moisture test was performed on UWA01100527-00 and passed with satisfactory results.QC surveyed a control point verify that the GPS was in tolerance for the shift.

QA/QC Representative MITCH HOGAN /

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Lift Approval

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LIFT APPROVAL FORM

PROJECT: Moab UMTRA Project **OTHER**

NW CORNER **DATE:** 5/26/2010

See attached for lift map.

P 1			
EW:	X	=	
NS:	X	=	
P 2			
EW:	X	=	
NS:	X	=	
P 3	N		
EW:	X	A =	
NS:	X	=	
P 4			
EW:	X	=	
NS:	X	=	
P 5			
EW:	X	=	
NS:	X	=	
Page 2 attached:	Y	N	

IDENTIFY LOTS ABOVE

LIFT ID: UWE01100526-01 NW CORNER: 6795933 N. 2122303 E.

THICKNESS: UNC: ≤ 12" COM: N/A ELEV: N/A Debris Insp. By: N/A Date: N/A Time: N/A

Comments: This lift is approximatly 86,585ft² with approximatley 2886yds³ of RRM approved on it. The daily moisture test for 5-26-10 night shift was taken on this lift. Operations began placing this lift on 5-26-10 but did not get it approved until 5-27-10, this is the reason for the date difference. MB 5-28-10

QC PERFORMED A SURVEY AND FOUND THICK AREAS, QC HAD OPERATIONS REMOVE THICK AREAS. QC RESURVEYED THE ENTIRE LIFT WITH SATISFACTORY RESULTS PRIOR TO COMPACTION.
KE 6-4-10

KEYING IN NOTES: N E S W Satisfactory DENSITY TESTS ID # (S): N/A

LIFT APPROVED BY: Kyler Edgehouse Kyler Edgehouse DATE: 5/27/2010 TIME: 1845

QA/QC APPROVAL 5-28-2010 DATE

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Slope Elevation Survey

Average lift thickness=	0.8	Bounding Box	Northing	Easting
Grid Size=	50	Lower Left	N	
Lift ID:	UWE01100526-01	Upper Right		A

Last Lift Elevations			Lift Approval Elevations			Lift Thickness	
Northing	Easting	Elevation	Northing	Easting	Elevation	Thickness	
6795418	2122328	4974.2	6795418	2122328	4974.5	0.3	OK
6795468	2122328	4974.8	6795468	2122328	4975.1	0.3	OK
6795518	2122328	4975.3	6795518	2122328	4976.5		THICK
6795568	2122328	4975.6	6795568	2122328	4976.7	1.0	OK
6795618	2122328	4976.2	6795618	2122328	4977.1	1.0	OK
6795668	2122328	4976.9	6795668	2122328	4977.9	1.0	OK
6795718	2122328	4977.9	6795718	2122328	4979.1		THICK
6795768	2122328	4979.3	6795768	2122328	4980.0	0.7	OK
6795818	2122328	4980.8	6795818	2122328	4981.2	0.4	OK
6795868	2122328	4981.7	6795868	2122328	4982.2	0.5	OK
6795918	2122328	4982.5	6795918	2122328	4982.9	0.4	OK
6795418	2122378	4973.8	6795418	2122378	4973.8	0.0	OK
6795468	2122378	4974.0	6795468	2122378	4974.0	0.0	OK
6795518	2122378	4974.7	6795518	2122378	4975.7	1.0	OK
6795568	2122378	4975.4	6795568	2122378	4976.7		THICK
6795618	2122378	4976.0	6795618	2122378	4977.3		THICK
6795668	2122378	4976.9	6795668	2122378	4978.2		THICK
6795718	2122378	4977.9	6795718	2122378	4979.0		THICK
6795768	2122378	4979.1	6795768	2122378	4980.2		THICK
6795818	2122378	4980.5	6795818	2122378	4981.2	0.7	OK
6795868	2122378	4981.4	6795868	2122378	4982.2	0.8	OK
6795918	2122378	4982.6	6795918	2122378	4983.2	0.6	OK
6795468	2122428	4973.1	6795468	2122428	4973.1	0.0	OK
6795518	2122428	4973.7	6795518	2122428	4973.7	0.1	OK
6795568	2122428	4974.4	6795568	2122428	4975.5		THICK
6795618	2122428	4975.2	6795618	2122428	4976.6		THICK
6795668	2122428	4976.2	6795668	2122428	4977.2	1.0	OK
6795718	2122428	4977.5	6795718	2122428	4978.6	1.0	OK
6795768	2122428	4979.2	6795768	2122428	4980.3		THICK
6795818	2122428	4980.6	6795818	2122428	4981.7	1.0	OK
6795868	2122428	4981.7	6795868	2122428	4982.6	0.9	OK
6795918	2122428	4982.7	6795918	2122428	4983.5	0.8	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK

N/A

MK 5.27.10

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Slope Elevation Survey

Average lift thickness=	0.9	Bounding Box	Northing	Easting
Grid Size=	50'	Lower Left	N	
Lift ID:	UWE01100526-01	Upper Right		A

Last Lift Elevations			Lift Approval Elevations			Lift Thickness	
Northing	Easting	Elevation	Northing	Easting	Elevation	Thickness	
6795418	2122328	4974.2	6795418	2122328	4975.2	1.0	OK
6795468	2122328	4974.8	6795468	2122328	4975.8	1.0	OK
6795518	2122328	4975.3	6795518	2122328	4976.2	0.9	OK
6795568	2122328	4975.6	6795568	2122328	4976.7	1.0	OK
6795618	2122328	4976.2	6795618	2122328	4977.2	1.0	OK
6795668	2122328	4976.9	6795668	2122328	4977.8	0.9	OK
6795718	2122328	4977.9	6795718	2122328	4978.9	1.0	OK
6795768	2122328	4979.3	6795768	2122328	4980.3	1.0	OK
6795818	2122328	4980.8	6795818	2122328	4981.3	0.5	OK
6795868	2122328	4981.7	6795868	2122328	4982.3	0.6	OK
6795918	2122328	4982.5	6795918	2122328	4983.2	0.8	OK
6795418	2122378	4973.8	6795418	2122378	4974.6	0.8	OK
6795468	2122378	4974.0	6795468	2122378	4975.0	1.0	OK
6795518	2122378	4974.7	6795518	2122378	4975.7	1.0	OK
6795568	2122378	4975.4	6795568	2122378	4976.2	0.9	OK
6795618	2122378	4976.0	6795618	2122378	4977.0	1.0	OK
6795668	2122378	4976.9	6795668	2122378	4977.9	1.0	OK
6795718	2122378	4977.9	6795718	2122378	4978.8	0.9	OK
6795768	2122378	4979.1	6795768	2122378	4980.1	1.0	OK
6795818	2122378	4980.5	6795818	2122378	4981.3	0.9	OK
6795868	2122378	4981.4	6795868	2122378	4982.2	0.9	OK
6795918	2122378	4982.6	6795918	2122378	4983.2	0.6	OK
6795468	2122428	4973.1	6795468	2122428	4973.9	0.9	OK
6795518	2122428	4973.7	6795518	2122428	4974.6	0.9	OK
6795568	2122428	4974.4	6795568	2122428	4975.2	0.9	OK
6795618	2122428	4975.2	6795618	2122428	4976.2	1.0	OK
6795668	2122428	4976.2	6795668	2122428	4977.1	0.9	OK
6795718	2122428	4977.5	6795718	2122428	4978.5	1.0	OK
6795768	2122428	4979.2	6795768	2122428	4980.1	1.0	OK
6795818	2122428	4980.6	6795818	2122428	4981.7	1.0	OK
6795868	2122428	4981.7	6795868	2122428	4982.7	1.0	OK
6795918	2122428	4982.7	6795918	2122428	4983.5	0.8	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK

N/A

MH 5-27-10

% =6	91.1%
Elevation Avg	4978.6
Total =6	6933
Total Lines	7607

Pass

Minimum Number of Machine Passes
3

Lift ID: UWE01100526-01

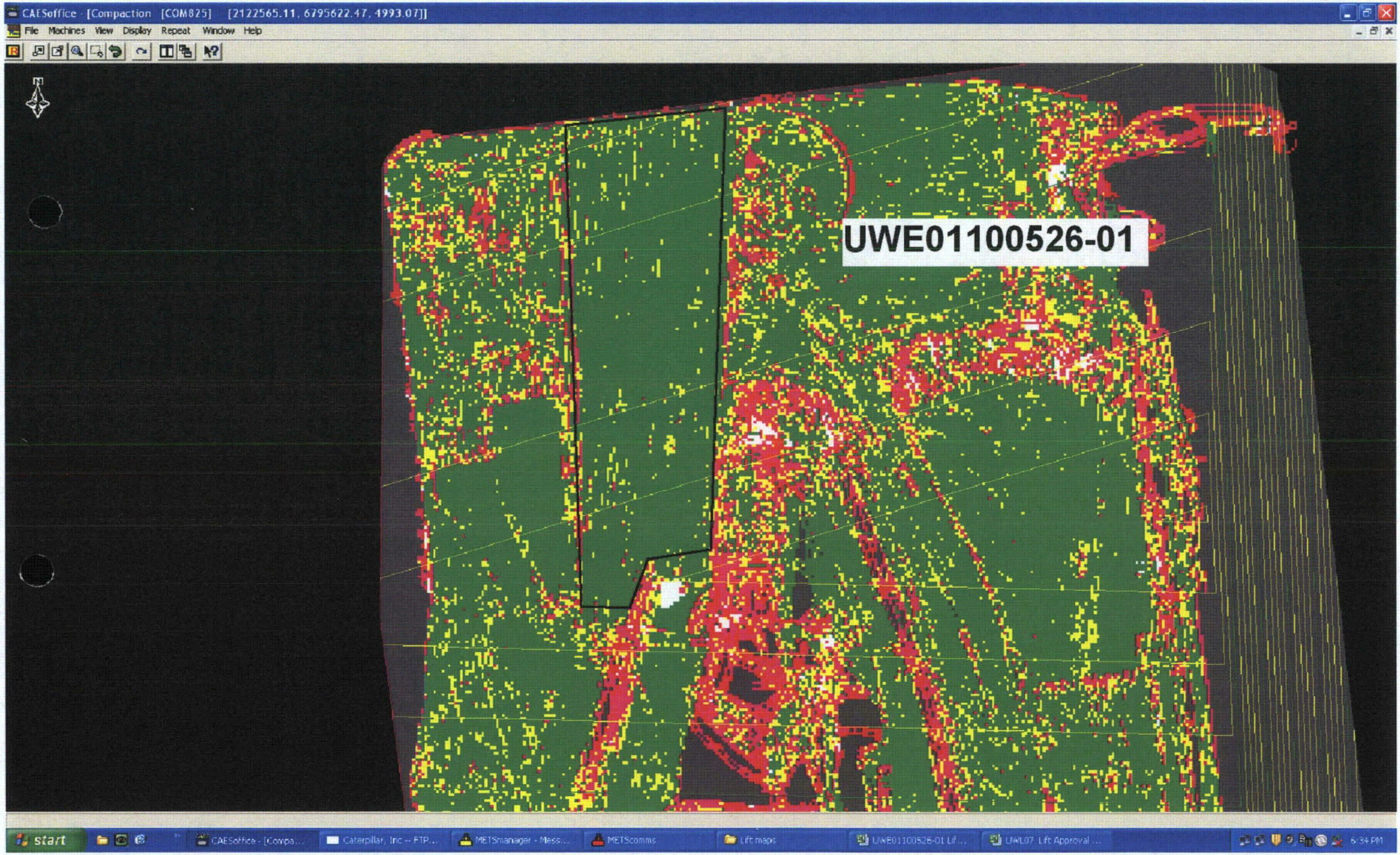
Northing	Easting	Elevation	# of Passes	Passes =6	Count
6795881	2122305	4982.6	6	1	1
6795884	2122305	4983.1	6	1	1
6795887	2122305	4983.5	5		1
6795891	2122305	4983.6	6	1	1
6795894	2122305	4983.7	6	1	1
6795897	2122305	4983.6	6	1	1
6795900	2122305	4983.7	6	1	1
6795904	2122305	4983.8	6	1	1
6795907	2122305	4983.7	2		1
6795910	2122305	4984.1	4		1
6795913	2122305	4983.9	2		1
6795917	2122305	4983.8	5		1
6795920	2122305	4983.3	6	1	1
6795923	2122305	4983.4	6	1	1
6795927	2122305	4983.2	6	1	1
6795930	2122305	4983.2	4		1
6795933	2122305	4983.3	1		1
6795772	2122308	4980.1	6	1	1
6795776	2122308	4980.5	6	1	1
6795779	2122308	4980.7	6	1	1
6795782	2122308	4980.6	6	1	1
6795786	2122308	4980.9	5		1
6795789	2122308	4981.1	5		1
6795792	2122308	4981.2	5		1
6795795	2122308	4981.2	5		1
6795799	2122308	4981.3	3		1
6795802	2122308	4981.6	2		1
6795805	2122308	4981.7	2		1
6795808	2122308	4981.9	3		1
6795812	2122308	4982.0	3		1
6795815	2122308	4982.1	3		1
6795818	2122308	4982.2	4		1
6795822	2122308	4982.3	4		1
6795825	2122308	4982.3	2		1
6795828	2122308	4982.4	2		1
6795831	2122308	4982.5	2		1
6795835	2122308	4982.5	2		1
6795838	2122308	4982.5	2		1
6795841	2122308	4982.6	3		1
6795845	2122308	4982.6	4		1
6795848	2122308	4982.7	5		1
6795851	2122308	4982.8	4		1
6795854	2122308	4982.9	2		1
6795858	2122308	4983.0	2		1

Lift Height
1' 0"

Thick Lift Threshold
2' 0"

Last Lift Elevation
N/A

Min. # of Wheel Passes
6


CAESoffice - [Compaction [COM825] [2122565.11, 6795622.47, 4993.07]]
File Machines View Display Repeat Window Help
UWE01100526-01
start
CAESoffice - [Compa...
Caterpillar, Inc -- FTP...
METSmanager - Mess...
METScomms
Lift maps
UWE01100526-01 Lif...
UWL07 Lift Approval ...
5:34 PM

ENERGYSOLUTIONS

FIELD DENSITY TEST

PROJECT: Moab UMTRA Project **OTHER** _____

LIFT IDENTIFICATION: UWE01100526-00 DATE: 5/26/2010

TEST ID NUMBER(S): Moisture test # 1

TEST LOCATION: Lift area TEST METHOD: N/A D1556 N/A D6938

ASTM D6938 (DENSITY DETERMINATION)

Make/Model _____ Gauge Serial # _____

Last Calibration Date: N/A

Daily Standard Counts:

Density _____ Moisture _____

____ *Method A (Direct Transmission)* or ____ *Method B (Backscatter)*

Depth Setting ____ *(inches)* Count Time ____ *(minutes)*

Moisture Count _____ Density Count _____

Wet Density (ρ_m) _____ *(lbs/ft³)* Dry Density _____ *(lbs/ft³)*

Moisture Density _____ *(lbs/ft³)* Moisture Fraction _____ *(%)*

N A

ASTM D1556 (DENSITY DETERMINATION)

Testing Apparatus ____ Calibrated Vol. *(lbs/ft³)* ____

Bulk Density of sand (ρ_1) _____ *g/cm³* _____ *lbs/ft³*

Mass of Sand to Fill Cone & Plate (M_2) _____ *g*

Mass of bottle & cone **before** filling cone, plate & hole		g
Mass of bottle & cone **after** filling cone, plate & hole		g
Mass of sand to fill cone, plate, & hole (M_1)		g
Mass of sand to fill hole		g
Mass of wet soil & container		g
Mass of container		g
Mass of wet soil (M_3)		g

Test Hole Volume

$V = (M_1 - M_2) / \rho_1$ _____ *cm³*

Dry Mass of soil

$M_4 = 100\ M_3 / (w + 100)$ _____ *g*

Wet Denisty

$\rho_m = (M_3 / V) \times 62.43$ _____ *lbs/ft³*

Dry Denisty

$\rho_d = M_4 / V$ _____ *g/cm³*

Dry Unit Weight

$\gamma_d = \rho_d \times 62.43$ _____ *lbs/ft³*

MOISTURE DETERMINATION

ASTM D4643

Container ID D-1

Mass of container & wet specimen (M_{cms})	456.7	g
Mass of container & dry specimen (M_{cds})	419.4	g
Mass of water (M_w) $M_w = M_{cms} - M_{cds}$	37.3	g
Mass of container (M_c)	164.4	g
Mass of dry specimen (M_s) $M_s = M_{cds} - M_c$	255.0	g
Moisture content (w) $w = (M_w / M_s) \times 100$	14.6	%

Soil Description: light red brown, orange brown, very fine to coarse, silty sand.

Proctor ID: RRM #77

Standard Proctor (ASTM D698)

Maximum Dry Density ($\gamma_d max$) 116.7 (lbs/ft³)

Optimum Moisture (w_{opt}) 13.8 (%)

Required Moisture: 10.8 % to 16.8 %

Required Percent Compaction: 90.0 (%)

Dry Density $(\rho_d) = (100 \times \rho_m)/(100 + w)$

$\rho d = (100 \times$ ##### $) / (100 +$ 14.6 $) =$ 0.0 *lbs/ft³*

Note: Wet Density from ASTM D 1556 (ρ_m) takes presidence over ASTM D 6938 (ρ_m)

Percent Compaction = ρ_d / $\gamma_d max$ x 100

0.0 / 116.7 x 100 = 0.0 %

N A

Comments:

Microwave oven power setting on HIGH. Initial time setting of 3 minutes and subsequent incremental drying periods of 1 minute until a change of 0.1 % or less of the initial wet mass of the soil.

TEST RESULTS:

X Pass Date: 5/26/10

____ Failed Moisture

____ Failed Compaction Time: 2350

By: Nate Abrams / MITCH HOGAN (print) (signature)

QA/QC APPROVAL 6·4·10 DATE

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Lift Approval

ENERGYSOLUTIONS

LIFT APPROVAL FORM

PROJECT: Moab UMTRA Project OTHER

NW CORNER DATE: 5/27/2010

See attached for lift map.

P 1			
EW:	X	=	
NS:	X	=	
P 2			
EW:	X	=	
NS:	X	=	
P 3	N		
EW:	X	A =	
NS:	X	=	
P 4			
EW:	X	=	
NS:	X	=	
P 5			
EW:	X	=	
NS:	X	=	
Page 2 attached:	Y	N	

IDENTIFY LOTS ABOVE

LIFT ID: UWL07100527-00 NW CORNER: 6795625 N. 2122668 E.

THICKNESS: UNC: ≤ 12" COM: N/A ELEV: N/A Debris Insp. By: N/A Date: N/A Time: N/A

Comments: This lift is 114,606 ft². There is approximately 2971 yds³ of RRM on this lift. Operations began placing this lift on 5-27-10 but the lift was not approved until 5-28-10. This is the reason for the difference in the lift ID and approval date. QC peroformed a survey and found thick areas. QC had operations remove thick areas. QC resurveyed entire lift with satisfactory results prior to compaction.

KEYING IN NOTES: N E S W Satisfactory DENSITY TESTS ID # (S): N/A

MITCH HOGAN /

LIFT APPROVED BY: Kyle Abrams / DATE: 5-28-2010 TIME: 0130

6-4-10

QA/QC APPROVAL DATE

ENERGYSOLUTIONS

Slope Elevation Survey

Average lift thickness=	0.2	Bounding Box	Northing	Easting
Grid Size=	50'	Lower Left	N	
Lift ID:	UWL07100527-00	Upper Right		A

Last Lift Elevations			Lift Approval Elevations			Lift Thickness	
Northing	Easting	Elevation	Northing	Easting	Elevation	Thickness	
6795580	2122704	4961.1	6795580	2122704	4961.1	0.0	OK
6795480	2122754	4959.2	6795480	2122754	4959.2	0.0	OK
6795530	2122754	4960.0	6795530	2122754	4960.1	0.1	OK
6795580	2122754	4960.9	6795580	2122754	4960.9	0.0	OK
6795630	2122754	4962.4	6795630	2122754	4962.4	0.0	OK
6795380	2122804	4956.7	6795380	2122804	4956.7	0.0	OK
6795430	2122804	4957.8	6795430	2122804	4957.8	0.0	OK
6795480	2122804	4959.0	6795480	2122804	4959.0	0.0	OK
6795530	2122804	4960.3	6795530	2122804	4960.3	0.0	OK
6795580	2122804	4961.1	6795580	2122804	4961.1	0.0	OK
6795630	2122804	4962.2	6795630	2122804	4962.2	0.0	OK
6795130	2122854	4950.9	6795130	2122854	4952.0	1.0	OK
6795180	2122854	4951.8	6795180	2122854	4952.2	0.4	OK
6795230	2122854	4952.7	6795230	2122854	4952.8	0.0	OK
6795280	2122854	4953.9	6795280	2122854	4953.9	0.0	OK
6795330	2122854	4955.2	6795330	2122854	4955.3	0.0	OK
6795380	2122854	4956.4	6795380	2122854	4956.4	0.0	OK
6795430	2122854	4957.6	6795430	2122854	4957.6	0.0	OK
6795480	2122854	4958.8	6795480	2122854	4958.8	0.0	OK
6795530	2122854	4959.9	6795530	2122854	4959.9	0.0	OK
6795580	2122854	4961.0	6795580	2122854	4961.0	0.0	OK
6795630	2122854	4962.1	6795630	2122854	4962.1	0.0	OK
6794980	2122904	4947.2	6794980	2122904	4947.4	0.2	OK
6795030	2122904	4948.7	6795030	2122904	4949.6	0.9	OK
6795080	2122904	4949.9	6795080	2122904	4951.0	[redacted]	THICK
6795130	2122904	4950.9	6795130	2122904	4952.0	[redacted]	THICK
6795180	2122904	4951.6	6795180	2122904	4952.1	0.5	OK
6795230	2122904	4952.5	6795230	2122904	4952.5	0.0	OK
6795280	2122904	4953.7	6795280	2122904	4953.8	0.1	OK
6795330	2122904	4954.9	6795330	2122904	4954.9	0.0	OK
6795380	2122904	4955.9	6795380	2122904	4955.9	0.0	OK
6795430	2122904	4957.2	6795430	2122904	4957.2	0.0	OK
6795480	2122904	4958.5	6795480	2122904	4958.5	0.0	OK
6795530	2122904	4959.4	6795530	2122904	4959.4	0.0	OK
6795580	2122904	4960.4	6795580	2122904	4960.4	0.0	OK
6795630	2122904	4961.8	6795630	2122904	4961.8	0.0	OK
6794980	2122954	4947.4	6794980	2122954	4947.6	0.2	OK
6795030	2122954	4948.7	6795030	2122954	4949.7	1.0	OK
6795080	2122954	4949.4	6795080	2122954	4950.5	[redacted]	THICK
6795130	2122954	4950.4	6795130	2122954	4951.3	0.9	OK
6795180	2122954	4951.1	6795180	2122954	4951.1	0.0	OK
6795230	2122954	4951.9	6795230	2122954	4952.0	0.1	OK
6795280	2122954	4952.8	6795280	2122954	4952.8	0.0	OK
						0.0	OK
			N			0.0	OK
	MW		A			0.0	OK
	5-EAO					0.0	OK

ENERGYSOLUTIONS

Slope Elevation Survey

Average lift thickness=	0.7	Bounding Box	Northing	Easting
Grid Size=	50'	Lower Left	N	
Lift ID:	UWL07100527-00	Upper Right		A

Last Lift Elevations			Lift Approval Elevations			Lift Thickness	
Northing	Easting	Elevation	Northing	Easting	Elevation	Thickness	
6795580	2122704	4961.1	6795580	2122704	4962.1	1.0	OK
6795480	2122754	4959.2	6795480	2122754	4959.8	0.6	OK
6795530	2122754	4960.0	6795530	2122754	4960.8	0.8	OK
6795580	2122754	4960.9	6795580	2122754	4962.0	1.0	OK
6795630	2122754	4962.4	6795630	2122754	4963.2	0.8	OK
6795380	2122804	4956.7	6795380	2122804	4957.2	0.5	OK
6795430	2122804	4957.8	6795430	2122804	4958.4	0.6	OK
6795480	2122804	4959.0	6795480	2122804	4959.6	0.6	OK
6795530	2122804	4960.3	6795530	2122804	4960.8	0.5	OK
6795580	2122804	4961.1	6795580	2122804	4961.9	0.9	OK
6795630	2122804	4962.2	6795630	2122804	4963.2	1.0	OK
6795130	2122854	4950.9	6795130	2122854	4951.7	0.8	OK
6795180	2122854	4951.8	6795180	2122854	4952.6	0.8	OK
6795230	2122854	4952.7	6795230	2122854	4953.5	0.8	OK
6795280	2122854	4953.9	6795280	2122854	4954.5	0.6	OK
6795330	2122854	4955.2	6795330	2122854	4955.9	0.7	OK
6795380	2122854	4956.4	6795380	2122854	4957.1	0.7	OK
6795430	2122854	4957.6	6795430	2122854	4958.2	0.6	OK
6795480	2122854	4958.8	6795480	2122854	4959.5	0.7	OK
6795530	2122854	4959.9	6795530	2122854	4960.8	0.9	OK
6795580	2122854	4961.0	6795580	2122854	4962.1	1.0	OK
6795630	2122854	4962.1	6795630	2122854	4962.9	0.8	OK
6794980	2122904	4947.2	6794980	2122904	4947.2	0.0	OK
6795030	2122904	4948.7	6795030	2122904	4949.3	0.6	OK
6795080	2122904	4949.9	6795080	2122904	4950.7	0.9	OK
6795130	2122904	4950.9	6795130	2122904	4951.7	0.9	OK
6795180	2122904	4951.6	6795180	2122904	4952.5	0.9	OK
6795230	2122904	4952.5	6795230	2122904	4953.3	0.8	OK
6795280	2122904	4953.7	6795280	2122904	4954.5	0.8	OK
6795330	2122904	4954.9	6795330	2122904	4955.7	0.8	OK
6795380	2122904	4955.9	6795380	2122904	4956.7	0.8	OK
6795430	2122904	4957.2	6795430	2122904	4957.9	0.7	OK
6795480	2122904	4958.5	6795480	2122904	4959.1	0.7	OK
6795530	2122904	4959.4	6795530	2122904	4960.3	0.9	OK
6795580	2122904	4960.4	6795580	2122904	4961.4	1.0	OK
6795630	2122904	4961.8	6795630	2122904	4962.4	0.6	OK
6794980	2122954	4947.4	6794980	2122954	4947.4	0.0	OK
6795030	2122954	4948.7	6795030	2122954	4949.6	0.8	OK
6795080	2122954	4949.4	6795080	2122954	4950.3	0.9	OK
6795130	2122954	4950.4	6795130	2122954	4951.0	0.6	OK
6795180	2122954	4951.1	6795180	2122954	4951.7	0.6	OK
6795230	2122954	4951.9	6795230	2122954	4952.5	0.5	OK
6795280	2122954	4952.8	6795280	2122954	4953.2	0.4	OK
						0.0	OK
						0.0	OK
			N			0.0	OK
	MH 5-27-10		A			0.0	OK

% =6	89.6%
Elevation Avg	4955.9
Total =6	9540
Total Lines	10647

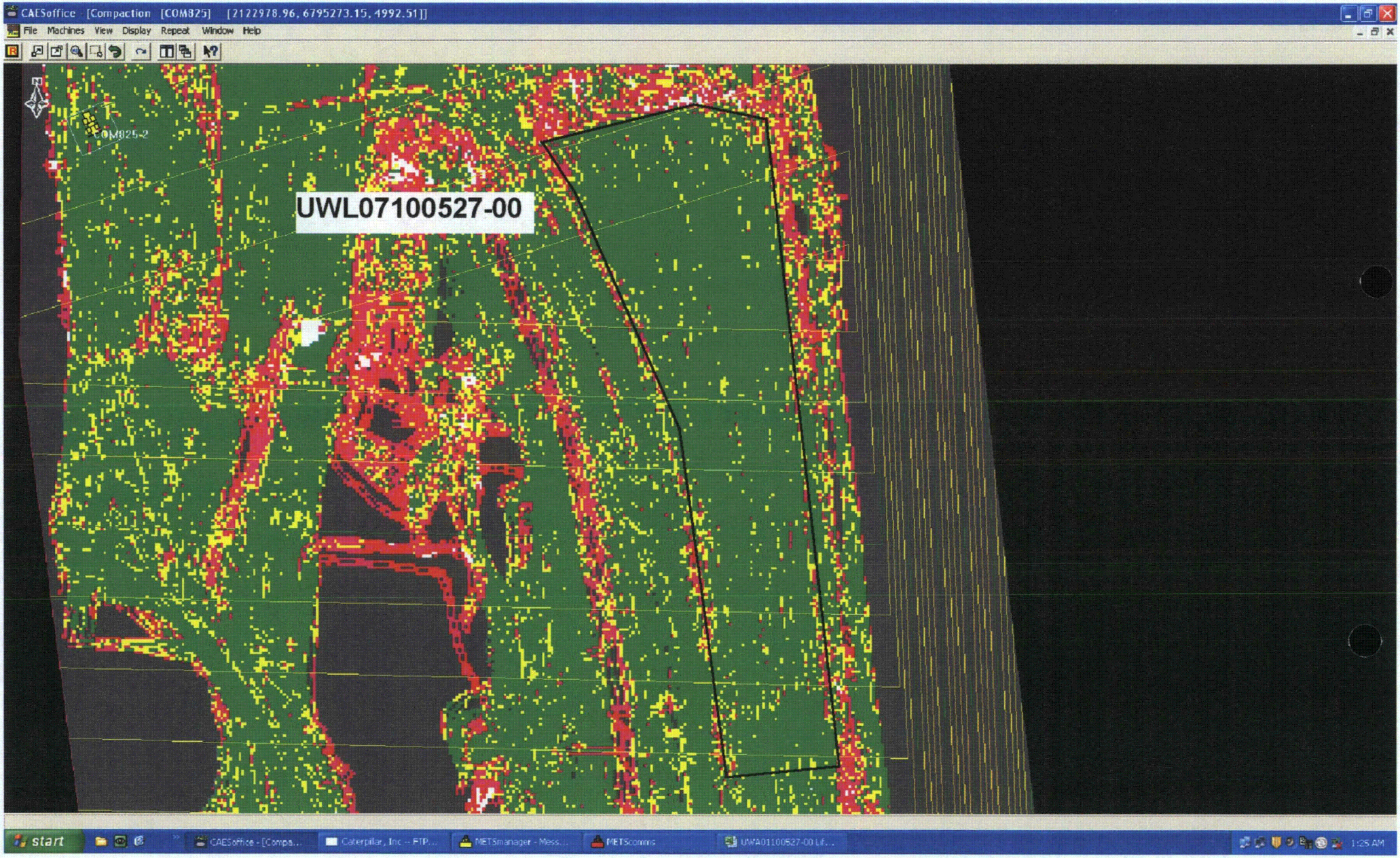
Pass

Minimum Number of Machine Passes
3

Lift ID: UWL07100527-00

Northing	Easting	Elevation	# of Passes	Passes =6	Count
6795625	2122670	4964.6	2		1
6795615	2122673	4963.7	2		1
6795618	2122673	4963.7	4		1
6795621	2122673	4963.9	6	1	1
6795625	2122673	4964.4	2		1
6795605	2122676	4962.9	1		1
6795608	2122676	4961.9	5		1
6795612	2122676	4963.3	2		1
6795615	2122676	4963.6	2		1
6795618	2122676	4963.6	6	1	1
6795621	2122676	4963.9	6	1	1
6795625	2122676	4963.9	4		1
6795598	2122680	4962.4	1		1
6795602	2122680	4962.3	6	1	1
6795605	2122680	4962.9	2		1
6795608	2122680	4962.7	3		1
6795612	2122680	4963.1	5		1
6795615	2122680	4963.4	6	1	1
6795618	2122680	4963.3	6	1	1
6795621	2122680	4963.7	2		1
6795625	2122680	4963.7	1		1
6795589	2122683	4962.5	1		1
6795592	2122683	4962.7	2		1
6795595	2122683	4962.3	4		1
6795598	2122683	4962.2	5		1
6795602	2122683	4962.5	2		1
6795605	2122683	4962.9	1		1
6795608	2122683	4962.8	6	1	1
6795612	2122683	4963.0	6	1	1
6795615	2122683	4963.2	6	1	1
6795618	2122683	4963.3	2		1
6795621	2122683	4963.6	6	1	1
6795625	2122683	4963.6	6	1	1
6795628	2122683	4963.7	4		1
6795582	2122686	4961.5	4		1
6795585	2122686	4962.3	1		1
6795589	2122686	4962.5	3		1
6795592	2122686	4962.6	2		1
6795595	2122686	4962.3	6	1	1
6795598	2122686	4962.5	2		1
6795602	2122686	4962.5	6	1	1
6795605	2122686	4962.6	6	1	1
6795608	2122686	4962.8	6	1	1
6795612	2122686	4962.8	6	1	1

Lift Height
1' 0"
Thick Lift Threshold
2' 0"
Last Lift Elevation
N/A
Min. # of Wheel Passes
6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File Machines View Display Repeat Window Help
COM825-2
UWL07100527-00
start
CAESoffice - [Compa...
Caterpillar, Inc -- FTP...
METSmanager - Mess...
METScomms
UWA01100527-00 Lif...
1:25 AM

ENERGYSOLUTIONS

Lift Approval

ENERGYSOLUTIONS

LIFT APPROVAL FORM

PROJECT: Moab UMTRA Project **OTHER**

NW CORNER **DATE:** 5/27/2010

See attached for lift map.

P 1				
EW:		X		=
NS:		X		=
P 2				
EW:		X		=
NS:		X		=
P 3				
EW:		X		=
NS:		X		=
P 4				
EW:		X		=
NS:		X		=
P 5				
EW:		X		=
NS:		X		=
Page 2 attached:			Y	N

N/A

IDENTIFY LOTS ABOVE

LIFT ID: UWA01100527-00 NW CORNER: 6795896 N 2122115 E

THICKNESS: UNC: ≤ 12" COM: N/A ELEV: N/A Debris Insp. By: N/A Date: N/A Time: N/A

Comments: This lift is approximately 86,585 ft², with an approximate total of 1924 yds³ of RRM approved on this lift. The daily moisture test for 5/27/2010 day shift and 5/27/10 night shift were performed on this lift and passed with satisfactory results. OPERATIONS BEGAN PLACING THIS LIFT ON 5.27.10 BUT IT WAS NOT APPROVED UNTIL 5.28.10. THIS IS THE REASON FOR THE DIFFERENCE BETWEEN THE LIFT ID AND APPROVAL DATE. MH 5.28.10

KEYING IN NOTES: N E S W Satisfactory DENSITY TESTS ID # (S): N/A

MITCH HOGAN

LIFT APPROVED BY: Nate Abrams DATE: 5/28/2010 TIME: 0216

6-4-10

QA/QC APPROVAL DATE

ENERGYSOLUTIONS

Slope Elevation Survey

Average lift thickness=	0.6	Bounding Box	Northing	Easting
Grid Size=	50'	Lower Left	N	
Lift ID:	UWA01100527-00	Upper Right		A

Last Lift Elevations			Lift Approval Elevations			Lift Thickness	
Northing	Easting	Elevation	Northing	Easting	Elevation	Thickness	
6795671	2122134	4977.7	6795671	2122134	4978.2	0.5	OK
6795721	2122134	4978.7	6795721	2122134	4979.6	0.9	OK
6795771	2122134	4980.3	6795771	2122134	4980.8	0.5	OK
6795821	2122134	4981.1	6795821	2122134	4981.5	0.5	OK
6795871	2122134	4981.8	6795871	2122134	4982.6	0.8	OK
6795421	2122184	4976.6	6795421	2122184	4977.2	0.6	OK
6795471	2122184	4976.9	6795471	2122184	4977.1	0.2	OK
6795521	2122184	4976.6	6795521	2122184	4977.1	0.6	OK
6795571	2122184	4976.5	6795571	2122184	4977.2	0.6	OK
6795621	2122184	4977.0	6795621	2122184	4977.7	0.7	OK
6795671	2122184	4977.9	6795671	2122184	4978.6	0.7	OK
6795721	2122184	4979.0	6795721	2122184	4979.6	0.6	OK
6795771	2122184	4980.2	6795771	2122184	4980.8	0.5	OK
6795821	2122184	4981.2	6795821	2122184	4981.7	0.5	OK
6795871	2122184	4982.2	6795871	2122184	4982.7	0.5	OK
6795421	2122234	4976.3	6795421	2122234	4976.8	0.6	OK
6795471	2122234	4976.7	6795471	2122234	4977.2	0.4	OK
6795521	2122234	4976.8	6795521	2122234	4977.1	0.3	OK
6795571	2122234	4976.7	6795571	2122234	4977.3	0.7	OK
6795621	2122234	4976.9	6795621	2122234	4977.6	0.7	OK
6795671	2122234	4977.7	6795671	2122234	4978.4	0.7	OK
6795721	2122234	4978.9	6795721	2122234	4979.5	0.5	OK
6795771	2122234	4980.1	6795771	2122234	4980.6	0.5	OK
6795821	2122234	4981.3	6795821	2122234	4981.8	0.5	OK
6795871	2122234	4982.5	6795871	2122234	4983.1	0.6	OK
6795921	2122234	4982.7	6795921	2122234	4983.4	0.8	OK
6795421	2122284	4975.7	6795421	2122284	4976.2	0.5	OK
6795471	2122284	4976.4	6795471	2122284	4976.8	0.4	OK
6795521	2122284	4976.5	6795521	2122284	4976.8	0.3	OK
6795571	2122284	4976.5	6795571	2122284	4977.1	0.6	OK
6795621	2122284	4976.8	6795621	2122284	4977.4	0.6	OK
6795671	2122284	4977.5	6795671	2122284	4978.3	0.8	OK
6795721	2122284	4978.5	6795721	2122284	4979.3	0.8	OK
6795771	2122284	4980.0	6795771	2122284	4980.8	0.8	OK
6795821	2122284	4981.4	6795821	2122284	4981.8	0.4	OK
6795871	2122284	4982.6	6795871	2122284	4983.2	0.6	OK
6795921	2122284	4982.9	6795921	2122284	4983.7	0.8	OK
						0.0	OK
						0.0	OK
						0.0	OK
						0.0	OK
			N/A			0.0	OK
						0.0	OK
						0.0	OK
	NA 5-28-10					0.0	OK
						0.0	OK
						0.0	OK

% =6	88.2%
Elevation Avg	4979.3
Total =6	7102
Total Lines	8055

Pass

Minimum Number of Machine Passes
3

Lift ID: UWA01100527-00

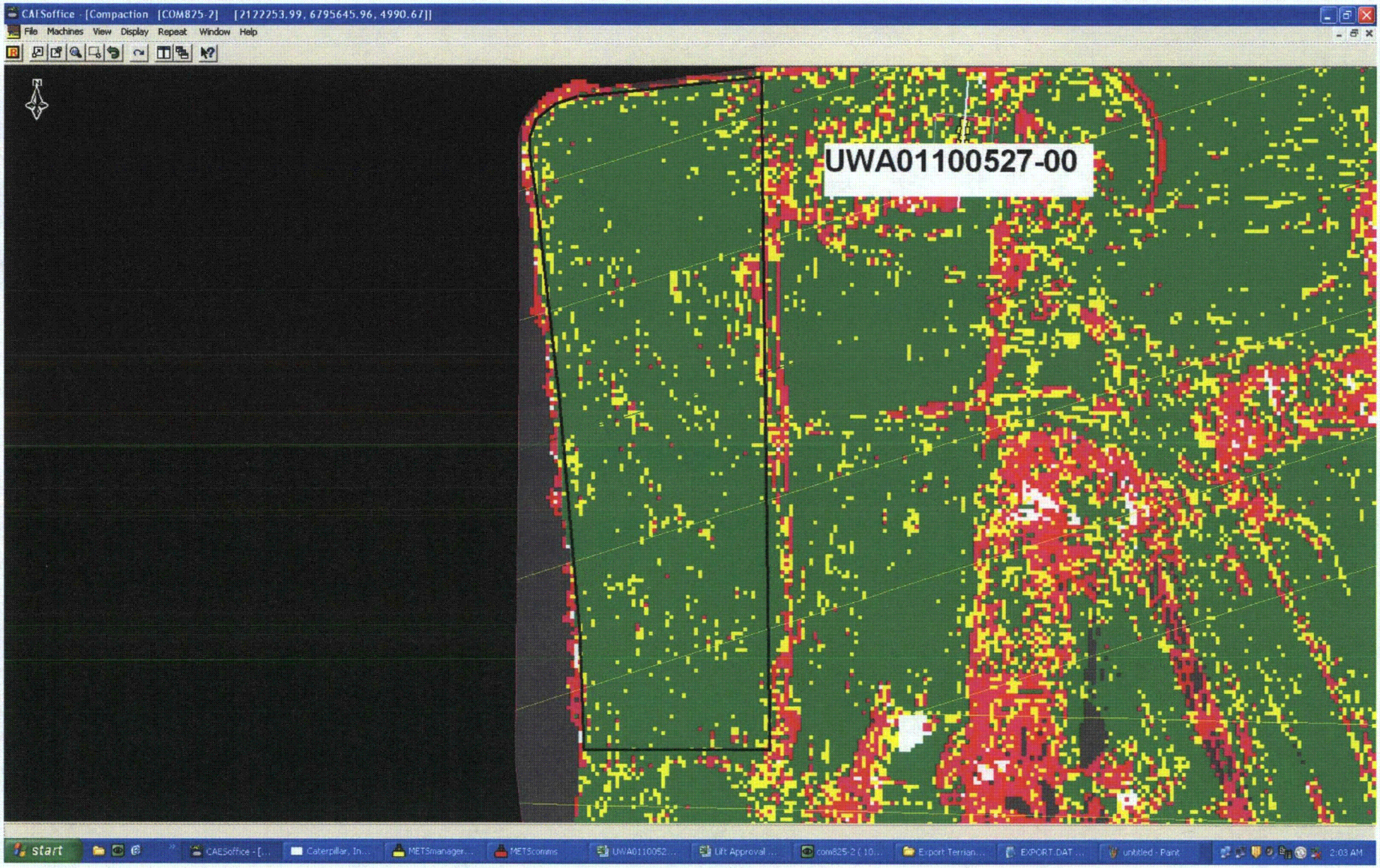
Northing	Easting	Elevation	# of Passes	Passes =6	Count
6795847	2122111	4982.4	1		1
6795850	2122111	4982.2	4		1
6795854	2122111	4982.3	4		1
6795857	2122111	4982.4	3		1
6795860	2122111	4982.4	5		1
6795864	2122111	4982.4	4		1
6795867	2122111	4982.5	3		1
6795870	2122111	4982.5	4		1
6795873	2122111	4982.6	4		1
6795877	2122111	4982.6	4		1
6795880	2122111	4982.7	3		1
6795818	2122114	4981.3	2		1
6795821	2122114	4981.5	3		1
6795824	2122114	4981.6	5		1
6795827	2122114	4981.5	2		1
6795831	2122114	4981.5	3		1
6795834	2122114	4981.8	3		1
6795837	2122114	4981.9	3		1
6795841	2122114	4982.1	6	1	1
6795844	2122114	4982.1	3		1
6795847	2122114	4982.2	2		1
6795850	2122114	4982.3	2		1
6795854	2122114	4982.3	4		1
6795857	2122114	4982.1	3		1
6795860	2122114	4982.4	4		1
6795864	2122114	4982.5	6	1	1
6795867	2122114	4982.5	6	1	1
6795870	2122114	4982.6	6	1	1
6795873	2122114	4982.8	6	1	1
6795877	2122114	4982.8	6	1	1
6795880	2122114	4982.8	6	1	1
6795883	2122114	4982.8	5		1
6795886	2122114	4982.7	4		1
6795890	2122114	4982.9	2		1
6795791	2122118	4981.7	4		1
6795795	2122118	4981.7	2		1
6795798	2122118	4980.9	6	1	1
6795801	2122118	4981.1	5		1
6795804	2122118	4981.1	5		1
6795808	2122118	4981.2	5		1
6795811	2122118	4981.2	5		1
6795814	2122118	4981.3	5		1
6795818	2122118	4981.4	5		1
6795821	2122118	4981.5	5		1

Lift Height
1' 0"

Thick Lift Threshold
2' 0"

Last Lift Elevation
N/A

Min. # of Wheel Passes
6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UWA01100527-00
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METSmanager...
METScomms
UWA0110052...
Lift Approval ...
com825-2 (10...
Export Terrian...
EXPORT.DAT ...
untitled - Paint
2:03 AM

ENERGYSOLUTIONS

FIELD DENSITY TEST

PROJECT: Moab UMTRA Project **OTHER** _____

LIFT IDENTIFICATION: UWA01100527-00 DATE: 5/27/2010

TEST ID NUMBER(S): #1

TEST LOCATION: Lift Area TEST METHOD: N/A D1556 N/A D6938

ASTM D6938 (DENSITY DETERMINATION)

Make/Model _____ Gauge Serial # _____

Last Calibration Date: N/A

Daily Standard Counts:

Density _____ Moisture _____

_____ *Method A (Direct Transmission)* or _____ *Method B (Backscatter)*

Depth Setting _____ *(inches)* Count Time _____ *(minutes)*

Moisture Count _____ Density Count _____

Wet Density (ρ_m) _____ *(lbs/ft³)* Dry Density _____ *(lbs/ft³)*

Moisture Density _____ *(lbs/ft³)* Moisture Fraction _____ *(%)*

N A

ASTM D1556 (DENSITY DETERMINATION)

Testing Apparatus _____ Calibrated Vol. *(lbs/ft³)* _____

Bulk Density of sand (ρ_1) _____ *g/cm³* _____ *lbs/ft³*

Mass of Sand to Fill Cone & Plate (M_2) _____ *g*

Mass of bottle & cone **before** filling cone, plate & hole		g
Mass of bottle & cone **after** filling cone, plate & hole		g
Mass of sand to fill cone, plate, & hole (M_1)		g
Mass of sand to fill hole		g
Mass of wet soil & container		g
Mass of container		g
Mass of wet soil (M_3)		g

Test Hole Volume

$V = (M_1 - M_2) / \rho_1$ _____ *cm³*

Dry Mass of soil

$M_4 = 100\ M_3 / (w + 100)$ _____ *g*

Wet Denisty

$\rho_m = (M_3 / V) \times 62.43$ _____ *lbs/ft³*

Dry Denisty

$\rho_d = M_4 / V$ _____ *g/cm³*

Dry Unit Weight

$\gamma_d = \rho_d \times 62.43$ _____ *lbs/ft³*

N A

MOISTURE DETERMINATION

ASTM D4643

Container ID D-2

Mass of container & wet specimen (M_{cms})	435.2	g
Mass of container & dry specimen (M_{cds})	400.9	g
Mass of water (M_w) $M_w = M_{cms} - M_{cds}$	34.3	g
Mass of container (M_c)	163.5	g
Mass of dry specimen (M_s) $M_s = M_{cds} - M_c$	237.4	g
Moisture content (w) $w = (M_w / M_s) \times 100$	14.4	%

Dry Density $(\rho_d) = (100 \times \rho_m)/(100 + w)$

$\rho d = ($ 100 x ##### $) / (100 +$ 14.4 $) =$ 0.0 *lbs/ft³*

Note: Wet Density from ASTM D 1556 (ρ_m) takes presidence over ASTM D 6938 (ρ_m)

N A

Percent Compaction = ρ_d / $\gamma_d max$ x 100

0.0 / 119.8 x 100 = 0.0 %

Soil Description: **Reddish brown, (2.5yr_4/4) very fine to medium angular to subround, moderatly sorted sand w/minor clay.**

Proctor ID: RRM #99

Standard Proctor (ASTM D698)

Maximum Dry Density ($\gamma_d max$) 119.8 (lbs/ft³)

Optimum Moisture (w_{opt}) 12.2 (%)

Required Moisture: 9.2 % to 15.2 %

Required Percent Compaction: 90.0 (%)

Comments:

Microwave oven power setting on HIGH. Initial time setting of 3 minutes and subsequent incremental drying periods of 1 minute until a change of 0.1 % or less of the initial wet mass of the soil.

TEST RESULTS:

X Pass Date: 5/27/10

_____ Failed Moisture

_____ Failed Compaction Time: 0900

By: David Stewart / David Stewart

(print) *(signature)*

QA/QC APPROVAL 5-28-2010 DATE

ENERGYSOLUTIONS

FIELD DENSITY TEST

PROJECT: Moab UMTRA Project **OTHER** _____

LIFT IDENTIFICATION: UWA01100527-00 DATE: 5/27/2010

TEST ID NUMBER(S): #2

TEST LOCATION: Lift Area TEST METHOD: N/A D1556 N/A D6938

ASTM D6938 (DENSITY DETERMINATION)

Make/Model _____ Gauge Serial # _____

Last Calibration Date: N/A

Daily Standard Counts:

Density _____ Moisture _____

_____ *Method A (Direct Transmission)* or _____ *Method B (Backscatter)*

Depth Setting _____ *(inches)* Count Time _____ *(minutes)*

Moisture Count _____ Density Count _____

Wet Density (ρ_m) _____ *(lbs/ft³)* Dry Density _____ *(lbs/ft³)*

Moisture Density _____ *(lbs/ft³)* Moisture Fraction _____ *(%)*

N A

ASTM D1556 (DENSITY DETERMINATION)

Testing Apparatus _____ Calibrated Vol. *(lbs/ft³)* _____

Bulk Density of sand (ρ_1) _____ *g/cm³* _____ *lbs/ft³*

Mass of Sand to Fill Cone & Plate (M_2) _____ *g*

Mass of bottle & cone **before** filling cone, plate & hole		g
Mass of bottle & cone **after** filling cone, plate & hole		g
Mass of sand to fill cone, plate, & hole (M_1)		g
Mass of sand to fill hole		g
Mass of wet soil & container		g
Mass of container		g
Mass of wet soil (M_3)		g

Test Hole Volume

$V = (M_1 - M_2) / \rho_1$ _____ *cm³*

Dry Mass of soil

$M_4 = 100\ M_3 / (w + 100)$ _____ *g*

Wet Denisty

$\rho_m = (M_3 / V) \times 62.43$ _____ *lbs/ft³*

Dry Denisty

$\rho_d = M_4 / V$ _____ *g/cm³*

Dry Unit Weight

$\gamma_d = \rho_d \times 62.43$ _____ *lbs/ft³*

N A

MOISTURE DETERMINATION

ASTM D4643

Container ID D-2

Mass of container & wet specimen (M_{cms})	438.5	g
Mass of container & dry specimen (M_{cds})	408.6	g
Mass of water (M_w) $M_w = M_{cms} - M_{cds}$	29.9	g
Mass of container (M_c)	163.7	g
Mass of dry specimen (M_s) $M_s = M_{cds} - M_c$	244.9	g
Moisture content (w) $w = (M_w / M_s) \times 100$	12.2	%

Dry Density $(\rho_d) = (100 \times \rho_m)/(100 + w)$

$\rho d = (100 \times$ ##### $) / (100 +$ 12.2 $) =$ 0.0 *lbs/ft³*

Note: Wet Density from ASTM D 1556 (ρ_m) takes presidence over ASTM D 6938 (ρ_m)

N A

Percent Compaction = ρ_d / $\gamma_d max \times 100$

0.0 / 112.9 x 100 = 0.0 %

Soil Description: **Light grayish brown very fine sand w/ minor clay**

Proctor ID: RRM #79

Standard Proctor (ASTM D698)

Maximum Dry Density ($\gamma_d max$) 112.9 (lbs/ft³)

Optimum Moisture (w_{opt}) 14.6 (%)

Required Moisture: 11.6 % to 17.6 %

Required Percent Compaction: 90.0 (%)

Comments:

Microwave oven power setting on HIGH. Initial time setting of 3 minutes and subsequent incremental drying periods of 1 minute until a change of 0.1 % or less of the initial wet mass of the soil.

TEST RESULTS:

X Pass Date: 5/27/10

_____ Failed Moisture

_____ Failed Compaction Time: 2220

By: NateAbrams / MITCH HOGAN / [signature]

(print) *(signature)*

[signature] 6/9/10

QA/QC APPROVAL DATE

ENERGYSOLUTIONS

Bio - Intrusion Hardness & Gradation Tests

CMT ENGINEERING LABORATORIES

Construction • Materials • Technologies
Geotechnical, Environmental, & Materials Engineering/Testing/Research

April 15, 2010

Neilson Construction
P.O. Box 620
Huntington, Utah 84528

Project: Energy Solutions, Crescent Junction
Project#: 3022
Material: Bio-Intrusion
Source: Crescent Junction #1

Laboratory Test	Average Test Value	Score	Weight	Score & Weight	Max Score
Mineral Type			Igneous		
Specific Gravity	2.656	8.0	9	72	90
Absorption %	1.0%	5.0	2	10	20
Sodium Sulfate %	0.0%	10	11	110	110
LA Abrasion	6.8	7.0	1	7.0	10
Schmidt Hammer	42	5.2	3	15.6	30
Total Score				**214.6**	**260**

Rating = *82.5*

TEST RESULTS

Specific Gravity and Absorption ASTM C-127
Lab # 202575

Relative Density (oven Dry) = 2.656
Relative Density (SSD) = 2.682
Relative Density (apparent) = 2.728
Absorption (%) = 1.0 %

Los Angeles Abrasion ASTM C-131
Lab # 202574

100 Revolutions Grading A
12 Spheres
% Wear = 6.8 %

Sodium Soundness ASTM C-88
Lab # 202576

% Loss = 0.0 %

Schmitt Hammer
203967

Rebound Number 42,40,44

Average = 42

Sincerely,

Susan Arnold

CMT ENGINEERING LABORATORIES
Construction • Materials • Technologies
Geotechnical, Environmental, & Materials Engineering/Testing/Research

April 15, 2010

Neilson Construction
P.O. Box 620
Huntington, Utah 84528

Project: Energy Solutions, Crescent Junction
Project#: 3022
Material: Bio-Intrusion
Source: Crescent Junction #2

Laboratory Test	Average Test Value	Score	Weight	Score & Weight	Max Score
Mineral Type			Igneous		
Specific Gravity	2.653	8.0	9	72	90
Absorption %	1.0%	5.0	2	10	20
Sodium Sulfate %	0.0%	10	11	110	110
LA Abrasion	7.8	6.4	1	6.4	10
Schmidt Hammer	36	4.5	3	13.5	30
Total Score				**211.9**	**260**

Rating = ***81.5***

TEST RESULTS

Specific Gravity and Absorption ASTM C-127
Lab # 202572

Relative Density (oven Dry)	=	2.653
Relative Density (SSD)	=	2.678
Relative Density (apparent)	=	2.722
Absorption (%)	=	1.0 %

Los Angeles Abrasion ASTM C-131
Lab # 202571

100 Revolutions Grading A
12 Spheres
% Wear = 7.8 %

Sodium Soundness ASTM C-88
Lab # 202573

% Loss = 0.0 %

Schmitt Hammer
203967

Rebound Number 35,37,35

Average = 36

Sincerely,

Susan Arnold

CMT ENGINEERING LABORATORIES

Construction • Materials • Technologies
Geotechnical, Environmental, & Materials Engineering/Testing/Research

April 15, 2010

Neilson Construction
P.O. Box 620
Huntington, Utah 84528

Project: Energy Solutions, Crescent Junction
Project#: 3022
Material: Bio-Intrusion
Source: Freemont Junction #1

Laboratory Test	Average Test Value	Score	Weight	Score & Weight	Max Score
Mineral Type			Igneous		
Specific Gravity	2.691	8.9	9	80.1	90
Absorption %	1.0%	5.0	2	10	20
Sodium Sulfate %	0.0%	10	11	110	110
LA Abrasion	8.1	6.2	1	6.2	10
Schmidt Hammer	58	7.8	3	23.4	30
Total Score				**229.7**	**260**

Rating = ***88.3***

TEST RESULTS

Specific Gravity and Absorption ASTM C-127
Lab # 202579

Relative Density (oven Dry) = 2.691
Relative Density (SSD) = 2.721
Relative Density (apparent) = 2.775
Absorption (%) = 1.2 %

Los Angeles Abrasion ASTM C-131
Lab # 202577

100 Revolutions	Grading A	
12 Spheres		
% Wear	=	8.1 %

Sodium Soundness ASTM C-88
Lab # 202578

% Loss	=	0.0 %

Schmitt Hammer
203967

Rebound Number		60,60,54
Average	=	58

Sincerely,

Susan Arnold

CMT ENGINEERING LABORATORIES

Construction Materials Testing
Geotechnical, Environmental & Materials Engineering/Testing/Research

September 22, 2009

Neilson Construction
P.O. Box 620
Huntington, Utah 84528

ok

Project: Energy Solutions, Crescent Junction Disposal Cell Cap Rock
Project#: 3022
Material: Basalt
Source: Freemont Junction #3

Laboratory Test	Average Test Value	Score	Weight	Score & Weight	Max Score
Mineral Type			Igneous		
Specific Gravity	2.670	8.1	9	72.9	90
Absorption %	0.8%	6.1	2	12.2	20
Sodium Sulfate %	0.0%	10	11	110	110
LA Abrasion	6.5	7.2	1	7.2	10
Schmidt Hammer	52	6.8	3	20.4	30
Total Score				**222.7**	**260**

Rating = *85.7*

TEST RESULTS

Specific Gravity and Absorption ASTM C-127
Lab # 179332

Relative Density (oven Dry) = 2.670
Relative Density (SSD) = 2.691
Relative Density (apparent) = 2.727
Absorption (%) = 0.8 %

Los Angeles Abrasion ASTM C-131
Lab # 202571

100 Revolutions Grading A
12 Spheres
% Wear = 7.8 %

Sodium Soundness ASTM C-88
Lab # 202573

% Loss = 0.0 %

Schmitt Hammer
203967

Rebound Number 35,37,35

Average = 36

Sincerely,

Susan Arnold

CENTRAL UTAH TESTING & INSPECTION

SIEVE ANALYSIS: AGGREGATES (ASTM C136-95 AASHTO T27-93)
MATERIALS FINER THAN No. 200 SCREEN (ASTM C117-95 AASHTO T11-91)

CLIENT: NIELSON CONSTRUCTION JOB#: 1357 DATE: 08/20/09
PROJECT: MISC. QC
SAMPLE LOCATION: FREMONT PIT - OFF BELT
MATERIAL TYPE: RIPRAP
TESTED BY: DB SAMPLED BY: CLIENT LAB #: 5020

Sieve Size	Weight Retained	Percent Retained	Percent Passing	Band/Target
4 in. (100mm)		0.0	100	100
3 in. (75mm)	2517.2	4.3	95	
2 in. (50mm)	19271.3	32.7	63	50 - 100
1 1/2 in. (37.5mm)	9618.5	16.3	47	40 - 50
1 in. (25mm)	7573.8	12.8	34	20 - 40
3/4 in. (19mm)	3922.7	6.6	27	
1/2 in. (12.5mm)	3115.6	5.3	22	15 - 25
3/8 in. (9.5mm)	452.0	6.3	16	
# 4 (4.75mm)	279.8	3.9	12	10 - 20
# 8 (2.36mm)	189.5	2.7	9	5 - 15
# 16 (1.18mm)	125.8	1.8	7	5 - 10
# 30 (600um)	102.3	1.4	6	
# 50 (300um)	84.1	1.2	5	
#100 (150um)	89.8	1.3	3	
#200 (75um)	79.5	1.1	2.4	0 - 5
-#200 (-75um)	13.3			

Total Sample Aggregate Weight 58988.3

- 1/2" Aggregate Weight 1571.5 - 1/2" After Wash Weight 1416.7

REMARKS:

I certify that this test was performed in accordance with ASTM C117-95 & C136-95/AASHTO T11-91 & T27-93.

P.O. BOX 427 CENTERFIELD, UT. 84622 (435) 528-5711 FAX (435) 528-5710

CENTRAL UTAH TESTING & INSPECTION

SIEVE ANALYSIS: AGGREGATES (ASTM C136-95 AASHTO T27-93)
MATERIALS FINER THAN No. 200 SCREEN (ASTM C117-95 AASHTO T11-91)

CLIENT: NIELSON CONSTRUCTION JOB#: 1357 DATE: 08/27/09
PROJECT: MISC. QC
SAMPLE LOCATION: FREMONT PIT - OFF BELT
MATERIAL TYPE: RIPRAP
TESTED BY: DB SAMPLED BY: CLIENT LAB #: 5021

Sieve Size	Weight Retained	Percent Retained	Percent Passing	Band/Target
4 in. (100mm)		0.0	100	100
3 in. (75mm)	3025.9	4.5	95	
2 in. (50mm)	21159.6	31.8	64	50 - 100
1 1/2 in. (37.5mm)	12225.8	18.4	45	40 - 50
1 in. (25mm)	9035.9	13.6	32	20 - 40
3/4 in. (19mm)	4266.5	6.4	25	
1/2 in. (12.5mm)	4108.7	6.2	19	15 - 25
3/8 in. (9.5mm)	498.5	5.9	13	
# 4 (4.75mm)	285.3	3.4	10	10 - 20
# 8 (2.36mm)	206.7	2.5	7	5 - 15
# 16 (1.18mm)	174.2	2.1	5	5 - 10
# 30 (600um)	96.7	1.2	4	
# 50 (300um)	90.2	1.1	3	
#100 (150um)	76.5	0.9	2	
#200 (75um)	72.1	0.9	1.3	0 - 5
#200 (-75um)	14.9			

Total Sample Aggregate Weight: 66548.7

- 1/2" Aggregate Weight: 1613.7 - 1/2" After Wash Weight: 1519.1

REMARKS:

I certify that this test was performed in accordance with ASTM C117-95 & C136-95/AASHTO T11-91 & T27-93

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CENTRAL UTAH TESTING & INSPECTION

SIEVE ANALYSIS: AGGREGATES (ASTM C136-95 AASHTO T27-93)
MATERIALS FINER THAN No. 200 SCREEN (ASTM C117-95 AASHTO T11-91)

CLIENT: NIELSON CONSTRUCTION JOB#: 1357 DATE: 09/02/09
PROJECT: MISC. QC
SAMPLE LOCATION: FREMONT PIT - OFF BELT
MATERIAL TYPE: RIPRAP
TESTED BY: DB SAMPLED BY: CLIENT LAB #: 5042

Sieve Size	Weight Retained	Percent Retained	Percent Passing	Band/Target
4 in. (100mm)		0.0	100	100
3 in. (75mm)	4025.2	6.4	94	
2 in. (50mm)	17997.0	28.8	65	50 - 100
1 1/2 in. (37.5mm)	10229.9	16.4	49	40 - 50
1 in. (25mm)	9231.1	14.8	34	20 - 40
3/4 in. (19mm)	4936.6	7.9	26	
1/2 in. (12.5mm)	3811.4	6.1	20	15 - 25
3/8 in. (9.5mm)	611.7	7.0	13	
# 4 (4.75mm)	215.9	2.5	10	10 - 20
# 8 (2.36mm)	234.0	2.7	8	5 - 15
# 16 (1.18mm)	197.1	2.2	5	5 - 10
# 30 (600um)	66.5	0.6	5	
# 50 (300um)	63.1	0.7	4	
#100 (150um)	76.8	0.9	3	
#200 (75um)	80.0	0.9	2.1	0 - 5
-#200 (-75um)	12.0			

Total Sample Aggregate Weight: 62553.1

- 1/2" Aggregate Weight: 1732.6 - 1/2" After Wash Weight: 1559.7

REMARKS:

I certify that this test was performed in accordance with ASTM C117-95 & C136-95/AASHTO T11-91 & T27-93

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CENTRAL UTAH TESTING & INSPECTION

SIEVE ANALYSIS: AGGREGATES (ASTM C136-95 AASHTO T27-93)
MATERIALS FINER THAN No. 200 SCREEN (ASTM C117-95 AASHTO T11-91)

CLIENT: NIELSON CONSTRUCTION JOB#: 1357 DATE: 09/10/09
PROJECT: MISC. QC
SAMPLE LOCATION: FREMONT PIT - OFF BELT
MATERIAL TYPE: RIPRAP
TESTED BY: DB SAMPLED BY: CLIENT LAB #: 5058

Sieve Size	Weight Retained	Percent Retained	Percent Passing	Band/Target
4 in. (100mm)		0.0	100	100
3 in. (75mm)	2325.4	4.5	95	
2 in. (50mm)	16165.1	31.6	64	50 - 100
1 1/2 in. (37.5mm)	9579.3	18.7	45	40 - 50
1 in. (25mm)	7016.1	13.7	31	20 - 40
3/4 in. (19mm)	3470.1	6.8	25	
1/2 in. (12.5mm)	3052.9	6.0	19	15 - 25
3/8 in. (9.5mm)	505.0	5.5	13	
# 4 (4.75mm)	303.7	3.3	10	10 - 20
# 8 (2.36mm)	213.7	2.3	7	5 - 15
# 16 (1.18mm)	119.6	1.3	6	5 - 10
# 30 (600um)	95.9	1.1	5	
# 50 (300um)	78.3	0.9	4	
#100 (150um)	90.4	1.0	3	
#200 (75um)	92.9	1.0	2.2	0 - 5
-#200 (-75um)	16.1			

Total Sample Aggregate Weight: 51140.0

- 1/2" Aggregate Weight: 1695.9 - 1/2" After Wash Weight: 1515.6

REMARKS:

I certify that this test was performed in accordance with ASTM C117-95 & C136-95/AASHTO T11-91 & T27-93.

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CENTRAL UTAH TESTING & INSPECTION

SIEVE ANALYSIS: AGGREGATES (ASTM C136-95 AASHTO T27-93)
MATERIALS FINER THAN No. 200 SCREEN (ASTM C117-95 AASHTO T11-91)

CLIENT: NIELSON CONSTRUCTION JOB#: 1357 DATE: 08/20/09
PROJECT: MISC. QC
SAMPLE LOCATION: FREMONT PIT - OFF BELT
MATERIAL TYPE: RIPRAP
TESTED BY: DB SAMPLED BY: CLIENT LAB #: 5020

Sieve Size	Weight Retained	Percent Retained	Percent Passing	Band/Target
4 in. (100mm)		0.0	100	100
3 in. (75mm)	2517.2	4.3	96	
2 in. (50mm)	19271.3	32.7	63	50 - 100
1 1/2 in. (37.5mm)	9618.5	16.3	47	40 - 50
1 in. (25mm)	7572.8	12.8	34	20 - 40
3/4 in. (19mm)	3922.7	6.6	27	
1/2 in. (12.5mm)	3115.6	5.3	22	15 - 25
3/8 in. (9.5mm)	452.6	6.3	16	
# 4 (4.75mm)	279.8	3.9	12	10 - 20
# 8 (2.36mm)	189.5	2.7	9	5 - 15
# 16 (1.18mm)	125.8	1.8	7	5 - 10
# 30 (600um)	102.3	1.4	6	
# 50 (300um)	84.1	1.2	5	
#100 (150um)	89.8	1.3	3	
#200 (75um)	79.5	1.1	2.4	0 - 5
-#200 (-75um)	13.3			

Total Sample Aggregate Weight: 58988.3
- 1/2" Aggregate Weight: 1571.5 - 1/2" After Wash Weight: 1416.7

REMARKS:

I certify that this test was performed in accordance with ASTM C117-95 & C136-95/AASHTO T11-91 & T27-93.

P.O. BOX 427 CENTERFIELD, UT. 84622 (435) 528-5711 FAX (435) 528-5710

SIEVE ANALYSIS: AGGREGATES (ASTM C136-95 AASHTO T27-93)
MATERIALS FINER THAN No. 200 SCREEN (ASTM C117-95 AASHTO T11-91)

LIENT: NIELSON CONSTRUCTION JOB#: 1357 DATE: 07/07/09
ROJECT: MISC. QC
AMPLE LOCATION: FREMONT PIT - OFF BELT
IATERIAL TYPE: RIPRAP
ESTED BY: SF SAMPLED BY: CLIENT LAB #: 4911

Sieve Size	Weight Retained	Percent Retained	Percent Passing	Band/Target
4 in. (100mm)		0.0	100	100
3 in. (75mm)	2250.6	4.4	96	
2 in. (50mm)	15126.1	29.3	66	50 - 100
1 1/2 in. (37.5mm)	9453.6	18.3	48	40 - 50
1 in. (25mm)	6792.9	13.2	35	20 - 40
3/4 in. (19mm)	3060.0	5.9	29	
1/2 in. (12.5mm)	5168.7	10.0	19	15 - 25
3/8 in. (9.5mm)	529.4	5.9	13	
# 4 (4.75mm)	417.7	4.7	8	10 - 20
# 8 (2.36mm)	113.2	1.3	7	5 - 15
# 16 (1.18mm)	78.4	0.9	6	5 - 10
# 30 (600um)	55.9	0.6	5	
# 50 (300um)	67.4	0.8	5	
#100 (150um)	87.7	1.0	4	
#200 (75um)	92.7	1.0	2.6	0 - 5
-#200 (-75um)	9.0			

70

tal Sample Aggregate Weight: 51556.6

- 1/2" Aggregate Weight: 1676.3 - 1/2" After Wash Weight: 1451.4

REMARKS:

ertify that this test was performed in accordance with ASTM C117-95 & C136-95/AASHTO T11-91 & T27-93.

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ENERGYSOLUTIONS

Cover Top Gradation

CENTRAL UTAH TESTING & INSPECTION

SIEVE ANALYSIS: AGGREGATES (ASTM C136-95 AASHTO T27-93)
MATERIALS FINER THAN No. 200 SCREEN (ASTM C117-95 AASHTO T11-91)

CLIENT: NIELSON CONSTRUCTION JOB#: 1357 DATE: 11/12/09
PROJECT: MISC. QC
SAMPLE LOCATION: FREMONT PIT - OFF BELT
MATERIAL TYPE: RIPRAP
TESTED BY: KC SAMPLED BY: CLIENT LAB #: 5181

(over pop) OK

Sieve Size	Weight Retained	Percent Retained	Percent Passing	Band/Target
4 in. (100mm)		0.0	100	100
3 in. (75mm)	9965.3	20.2	80	
2 in. (50mm)	16601.7	33.6	46	40 - 50
1 1/2 in. (37.5mm)	8744.1	17.7	28	20 - 30
1 in. (25mm)	5262.9	10.7	18	10 - 20
3/4 in. (19mm)	3868.1	7.8	10	
1/2 in. (12.5mm)	2416.5	4.9	5	5 - 25
3/8 in. (9.5mm)	219.7	0.7	4	
# 4 (4.75mm)	365.5	1.2	3	0 - 5
# 8 (2.36mm)	184.6	0.6	3	0 - 5
# 16 (1.18mm)	131.4	0.4	2	0 - 5
# 30 (600um)	88.8	0.3	2	
# 50 (300um)	85.8	0.3	1	
#100 (150um)	96.2	0.3	1	
#200 (75um)	80.9	0.3	0.9	0 - 5
-#200 (-75um)	12.6			

Total Sample Aggregate Weight: 49385.0
- 1/2" Aggregate Weight: 1510.1 - 1/2" After Wash Weight: 1265.5

REMARKS:

I certify that this test was performed in accordance with ASTM C117-95 & C136-95/AASHTO T11-91 & T27-93.

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CENTRAL UTAH TESTING & INSPECTION

SIEVE ANALYSIS: AGGREGATES (ASTM C136-95 AASHTO T27-93)
MATERIALS FINER THAN No. 200 SCREEN (ASTM C117-95 AASHTO T11-91)

CLIENT: NIELSON CONSTRUCTION JOB#: 1357 DATE: 11/16/09
PROJECT: MISC. QC
SAMPLE LOCATION: FREMONT PIT - OFF BELT
MATERIAL TYPE: RIPRAP
TESTED BY: KC SAMPLED BY: CLIENT LAB #: 5187

Cover pp

Sieve Size	Weight Retained	Percent Retained	Percent Passing	Band/Target
4 in. (100mm)		0.0	100	100
3 in. (75mm)	10428.8	19.6	80	
2 in. (50mm)	17511.9	32.9	48	40 - 50
1 1/2 in. (37.5mm)	9587.9	18.0	30	20 - 30
1 in. (25mm)	6144.2	11.5	18	10 - 20
3/4 in. (19mm)	4094.4	7.7	10	
1/2 in. (12.5mm)	2512.6	4.7	6	5 - 25
3/8 in. (9.5mm)	312.8	0.9	5	
# 4 (4.75mm)	404.6	1.2	3	0 - 5
# 8 (2.36mm)	270.2	0.8	3	0 - 5
# 16 (1.18mm)	184.4	0.5	2	0 - 5
# 30 (600um)	123.4	0.4	2	
# 50 (300um)	114.8	0.3	1	
#100 (150um)	122.4	0.4	1	
#200 (75um)	95.6	0.3	0.8	0 - 5
-#200 (-75um)	13.8			

Total Sample Aggregate Weight: 53251.4

- 1/2" Aggregate Weight: 1889.6 - 1/2" After Wash Weight: 1642.0

REMARKS:

I certify that this test was performed in accordance with ASTM C117-95 & C136-95/AASHTO T11-91 & T27-93.

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CENTRAL UTAH TESTING & INSPECTION

SIEVE ANALYSIS: AGGREGATES (ASTM C136-95 AASHTO T27-93)
MATERIALS FINER THAN No. 200 SCREEN (ASTM C117-95 AASHTO T11-91)

CLIENT: NIELSON CONSTRUCTION JOB#: 1357 DATE: 10/27/09
PROJECT: MISC. QC
SAMPLE LOCATION: FREMONT PIT - OFF BELT
MATERIAL TYPE: RIPRAP
TESTED BY: JC SAMPLED BY: CLIENT LAB #: 5149

Sieve Size	Weight Retained	Percent Retained	Percent Passing	Band/Target
4 in. (100mm)		0.0	100	100
3 in. (75mm)	18391.3	32.9	67	
2 in. (50mm)	12240.5	21.9	45	40 - 50
1 1/2 in. (37.5mm)	9224.1	16.5	29	20 - 30
1 in. (25mm)	6302.4	11.3	17	10 - 20
3/4 in. (19mm)	3488.2	6.2	11	
1/2 in. (12.5mm)	3034.6	5.4	6	5 - 25
3/8 in. (9.5mm)	278.7	1.0	5	
# 4 (4.75mm)	295.1	1.0	4	0 - 5
# 8 (2.36mm)	143.1	0.5	3	0 - 5
# 16 (1.18mm)	116.7	0.4	3	0 - 5
# 30 (600um)	93.5	0.3	2	
# 50 (300um)	90.4	0.3	2	
#100 (150um)	83.7	0.3	2	
#200 (75um)	83.4	0.3	1.5	0 - 5
-#200 (-75um)	15.1			

layer top
OK

Total Sample Aggregate Weight: 55848.3

- 1/2" Aggregate Weight: 1622.7 - 1/2" After Wash Weight: 1200.7

REMARKS:

I certify that this test was performed in accordance with ASTM C117-95 & C136-95/AASHTO T11-91 & T27-93.

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CENTRAL UTAH TESTING & INSPECTION

SIEVE ANALYSIS: AGGREGATES (ASTM C136-95 AASHTO T27-93)
MATERIALS FINER THAN No. 200 SCREEN (ASTM C117-95 AASHTO T11-91)

CLIENT: NIELSON CONSTRUCTION JOB#: 1357 DATE: 10/30/09
PROJECT: MISC. QC
SAMPLE LOCATION: FREMONT PIT - OFF BELT
MATERIAL TYPE: RIPRAP
TESTED BY: JC SAMPLED BY: CLIENT LAB #: 5150

Coarse top

Sieve Size	Weight Retained	Percent Retained	Percent Passing	Band/Target
4 in. (100mm)		0.0	100	100
3 in. (75mm)	15638.4	31.4	69	
2 in. (50mm)	11130.6	22.3	46	40 - 50
1 1/2 in. (37.5mm)	8288.6	16.6	30	20 - 30
1 in. (25mm)	5995.6	12.0	18	10 - 20
3/4 in. (19mm)	3312.4	6.6	11	
1/2 in. (12.5mm)	2692.1	5.4	6	5 - 25
3/8 in. (9.5mm)	306.4	0.9	5	
# 4 (4.75mm)	365.9	1.1	4	0 - 5
# 8 (2.36mm)	168.3	0.5	3	0 - 5
# 16 (1.18mm)	139.5	0.4	3	0 - 5
# 30 (600um)	119.2	0.4	2	
# 50 (300um)	112.9	0.3	2	
#100 (150um)	105.2	0.3	2	
#200 (75um)	92.9	0.3	1.3	0 - 5
-#200 (-75um)	16.3			

Total Sample Aggregate Weight: 49852.3

- 1/2" Aggregate Weight: 1858.3 - 1/2" After Wash Weight: 1428.6

REMARKS:

I certify that this test was performed in accordance with ASTM C117-95 & C136-95/AASHTO T11-91 & T27-93.

P.O. BOX 427 CENTERFIELD, UT. 84622 (435) 528-5711 FAX (435) 528-5710

CENTRAL UTAH TESTING & INSPECTION

SIEVE ANALYSIS: AGGREGATES (ASTM C136-95 AASHTO T27-93)
MATERIALS FINER THAN No. 200 SCREEN (ASTM C117-95 AASHTO T11-91)

CLIENT: NIELSON CONSTRUCTION JOB#: 1357 DATE: 11/04/09
PROJECT: MISC. QC
SAMPLE LOCATION: FREMONT PIT - OFF BELT
MATERIAL TYPE: RIPRAP
TESTED BY: JC SAMPLED BY: CLIENT LAB #: 5159

Lower top OK

Sieve Size	Weight Retained	Percent Retained	Percent Passing	Band/Target
4 in. (100mm)		0.0	100	100
3 in. (75mm)	16522.8	29.6	70	
2 in. (50mm)	11845.5	21.2	49	40 - 50
1 1/2 in. (37.5mm)	10787.4	19.3	30	20 - 30
1 in. (25mm)	5876.2	10.5	19	10 - 20
3/4 in. (19mm)	3618.9	6.5	13	
1/2 in. (12.5mm)	3344.9	6.0	7	5 - 25
3/8 in. (9.5mm)	277.6	1.2	6	
# 4 (4.75mm)	334.2	1.5	4	0 - 5
# 8 (2.36mm)	149.8	0.7	4	0 - 5
# 16 (1.18mm)	125.4	0.5	3	0 - 5
# 30 (600um)	101.4	0.4	3	
# 50 (300um)	96.7	0.4	2	
#100 (150um)	97.4	0.4	2	
#200 (75um)	88.5	0.4	1.4	0 - 5
-#200 (-75um)	12.7			

Total Sample Aggregate Weight: 55898.7

- 1/2" Aggregate Weight: 1597.8 - 1/2" After Wash Weight: 1285.7

REMARKS:

I certify that this test was performed in accordance with ASTM C117-95 & C136-95/AASHTO T11-91 & T27-93.

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CENTRAL UTAH TESTING & INSPECTION

SIEVE ANALYSIS: AGGREGATES (ASTM C136-95 AASHTO T27-93)
MATERIALS FINER THAN No. 200 SCREEN (ASTM C117-95 AASHTO T11-91)

CLIENT: NIELSON CONSTRUCTION JOB#: 1357 DATE: 11/10/09
PROJECT: MISC. QC
SAMPLE LOCATION: FREMONT PIT - OFF BELT
MATERIAL TYPE: RIPRAP
TESTED BY: DB SAMPLED BY: CLIENT LAB #: 5175

Sieve Size	Weight Retained	Percent Retained	Percent Passing	Band/Target
4 in. (100mm)		0.0	100	100
3 in. (75mm)	23676.9	21.7	78	
2 in. (50mm)	32329.4	29.6	49	40 - 50
1 1/2 in. (37.5mm)	20629.6	18.9	30	20 - 30
1 in. (25mm)	14090.4	12.9	17	10 - 20
3/4 in. (19mm)	5309.9	4.9	12	
1/2 in. (12.5mm)	5537.1	5.1	7	5 - 25
3/8 in. (9.5mm)	253.2	1.1	6	
# 4 (4.75mm)	399.0	1.7	4	0 - 5
# 8 (2.36mm)	239.1	1.0	3	0 - 5
# 16 (1.18mm)	172.0	0.7	3	0 - 5
# 30 (600um)	117.8	0.5	2	
# 50 (300um)	101.0	0.4	2	
#100 (150um)	105.0	0.4	1	
#200 (75um)	84.9	0.4	0.8	0 - 5
-#200 (-75um)	15.8			

Cover top 6"

Total Sample Aggregate Weight: 109296.2

- 1/2" Aggregate Weight: 1653.7 - 1/2" After Wash Weight: 1457.8

REMARKS:

I certify that this test was performed in accordance with ASTM C117-95 & C136-95/AASHTO T11-91 & T27-93.

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