WEAVER GENERAL CONSTRUCTION COMPANY
3679 S. Huron St., Suite 404
Englewood, CO 80110
Phone: (303) 789-4111 FAX: (303) 789-4310

SUBMITTAL TRANSMITAL

June 23, 2011
WGC Submittal No: 03300-010.A

PROJECT: **Harold Thompson Regional WRF**
Birdsall Rd.
Fountain, CO 80817
Job No. 2908

ENGINEER: **GMS, Inc.**
611 No. Weber St., #300
Colorado Springs, CO 80903
719-475-2935 Roger Sams

OWNER: **Lower Fountain Metropolitan Sewage Disposal District**
901 S. Santa Fe Ave.
Fountain, CO 80817
719-382-5303 James Heckman

CONTRACTOR: **Garney Companies Inc.**
7911 Shaffer Parkway
Littleton, CO 80127

SUBJECT: Re-submittal - Concrete Mix Design for S.O.G. and Encasements – Addresses Review Comments for 3" Slump and Legible Copies

SPEC SECTION: 03300 – Cast-In-Place Concrete

PREVIOUS SUBMISSION DATES: None

DEVIATIONS FROM SPEC: ___ YES _X_ NO

CONTRACTOR'S STAMP: This submittal has been reviewed by Weaver General Construction and approved with respect to the means, methods, techniques, & safety precautions & programs incidental thereto. Weaver General Construction also warrants that this submittal complies with contracted documents and comprises on deviations thereto:

Contractor's Stamp:	Engineer's Stamp:
Date: 6/23/11 Reviewed by: H.C. Myers (X) Reviewed Without Comments ( ) Reviewed With Comments	

ENGINEER'S COMMENTS:_____
_____

Garney Construction, Inc.
7911 Shaffer Parkway
Littleton, CO 80127
Phone: 303-791-3600
Fax: 303-791-1801

SUBMITTAL

NO. 0010A

Title: **Concrete Mix Design for S.O.G. and Encasements Re-submittal**

DATE: **June 23, 2011**

PROJECT: Harold D. Thompson **JOB:** 6591

TO: Jeff Burst
Weaver Construction

REQUEST:

Attached mix design for Concrete SOG and Encasements.

Re-submittal addresses Engineers comments for 3" slump and ledgible copy.

Reference Previous submittal 03300-010

Date: June 23, 2011 **Signed:** Mike Moore

Answered By: **Date:** _____ **Signed:** _____

TRANSIT MIX CONCRETE CO.

Colorado Springs
P.O. Box-1030, CO 80901
(719) 475-0700 (Fax) 475-0226

Pueblo
P.O. Box-857, CO 81002
(719) 561-8350 (Fax) 566-0231

CONCRETE MIX DESIGN

March 30, 2011

Secondary Clarifier
Birdsall Road East of Old Pueblo Road
El Paso County, CO

"Structural Concrete for Liquid Containment Structures"
4500 PSI @ 28 Days • 15% Fly Ash • Air Entrained • 0.42 Maximum W/CM

GARNEY COMPANIES Inc.
7911 Shaffer Parkway
Littleton, Colorado 80127

		ONE CUBIC YARD
Cement	(Holcim Type I/II)	520 lbs
Fly Ash	(SRMG Class F)	91 lbs
AEA	(Master Builders AE-90)	3.3 oz
WRA	(Master Builders 200N)	18.3 oz
HRWRA	(Master Builders Polyheed 1020)	22.9 oz
Sand	(Daniels Sand Co.)	1310 lbs
Rock	(Castle Concrete)	1700 lbs
Water		255 lbs

Transit Mix Concrete CO Identification Number: 34502110

Approximate Physical Properties:	
Unit Weight - pcf	± 142.1
Slump – Inches	3" Max
Air Content - %	6% ± 1%
Water / Cementitious Ratio	0.42

This mix is derived from the enclosed "Summary of Concrete Mix Data" series (Table No.107-36). Compliance information on the various materials is also enclosed.
Production and delivery is in accordance with ASTM C 94 Standard Specification for Ready-Mixed Concrete. Compressive strength performance is conditional with strict adherence to the current ASTM Standards relating to concrete, and the latest revisions of ACI 301 and 318.

TRANSIT MIX CONCRETE CO.

R. John Ruppert
Vice President, Sales

J. B. Morgan, P. E., C.C.E.

CONSULTING STRUCTURAL ENGINEER

Summary of Concrete Mix Data

Table NO. 107-36 (Air Entrained Normal Weight Concrete w/ Fly Ash @ 3-5" Slump)

Client:	Transit Mix Concrete CO
Project:	Plant Mixes
Aggregates:	ASTM C 33 Coarse and Fine
Cement:	ASTM C-150 Type I-II
Fly Ash:	ASTM C 618 Class F
Admixtures:	ASTM C-494 (WRA) and ASTM C 260 (AEA)

3450#/10

↓

Mix Proportions	**4.00**	**4.50**	**5.00**	**5.50**	**6.00**	**6.50**	**7.00**	**7.50**
Cement (Type I-II), lbs.	320	360	400	440	480	520	560	600
Fly Ash (Class F), lbs.	56	63	70	77	84	91	98	105
Air Entrainer, oz.	2.5	2.6	2.7	2.9	3.1	3.3	3.6	3.9
Water Reducer, oz.	11.3	12.7	14.1	15.5	16.9	18.3	19.7	21.2
High Range Water Reducer, oz.	0	0	0	19.4	21.1	22.9	24.7	26.4
ASTM C 33 Fine Aggregate, lbs.	1550	1500	1460	1390	1350	1310	1270	1230
No. 57/67 Coarse Aggregate, lbs.	1700	1700	1700	1700	1700	1700	1700	1700
Water, gallons	29.0	29.5	30.0	30.2	30.4	30.6	31.0	31.5
Water, lbs.	241.6	245.7	249.9	251.6	253.2	254.9	258.2	262.4
Physical Properties								
Wet Unit WT. (PCF)	140.5	140.7	141.0	141.2	141.7	142.1	142.4	142.4
Slump (Inches)	4.00	4.50	4.25	4.00	4.00	3.75	4.25	4.00
Air Content, %	5.2	5.5	5.8	6.0	5.8	6.0	6.0	6.2
Water Cement Ratio	0.642	0.581	0.532	0.487	0.449	0.417	0.392	0.372
Temperature, (^{0}F)	72	73	75	76	77	77	78	78
Compressive Strength, psi	**2000**	**2500**	**3000**	**3500**	**4000**	**4500**	**5000**	**5500**
3 Day Average	1850	2310	2780	3250	3720	4240	4380	4570
7 Day Average	2400	2860	3150	3640	4180	4620	5010	5220
28 Day Average	3020	3650	4440	5180	5790	6220	6740	7040

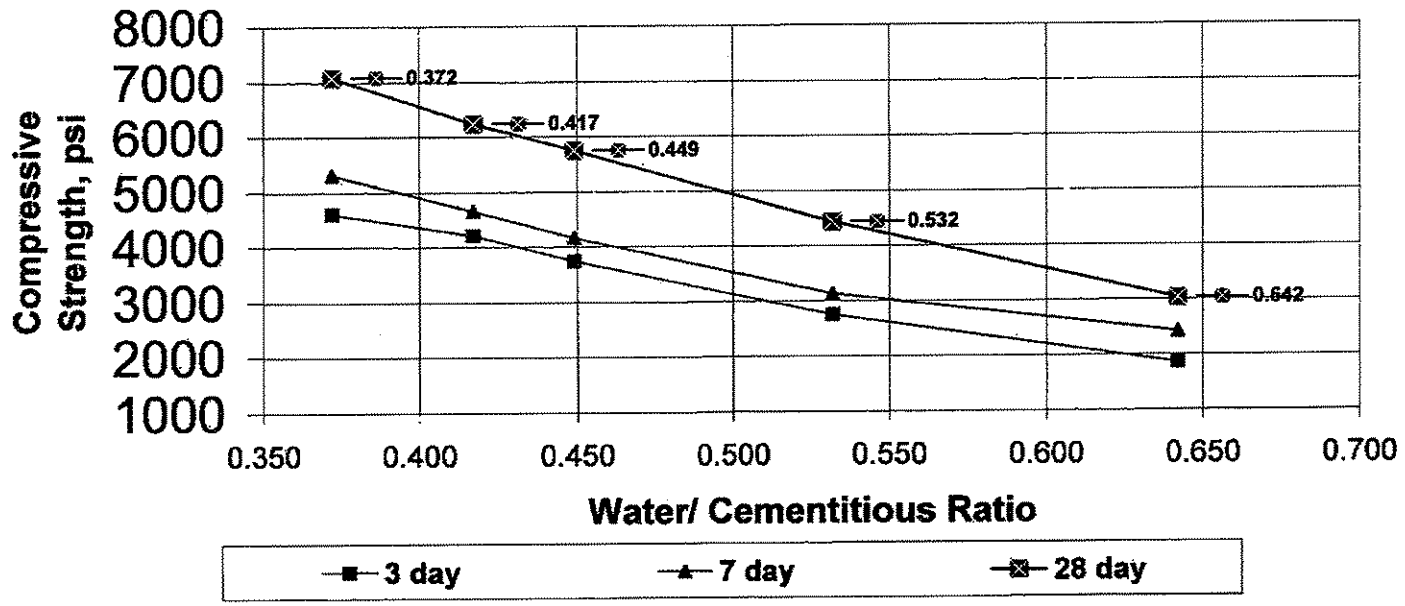
Date : Monday, February 08, 2010

400 South 7th Street, Raton, New Mexico 87740

Phone: (575) 445-8738 Mobile: (719) 332-4557 Fax: (575) 445-7055

Transit Mix Concrete Company
Table No. 107-36

Compressive Strength
vs.
Water Cementitious Ratio



Compressive Strength, psi vs . Water/Cementitious Ratio					
Water Cement Ratio	0.642	0.532	0.449	0.417	0.372
Cementitious Content, lbs.	376	470	564	611	705
3 Day Average	1860	2750	3740	4210	4600
7 Day Average	2420	3130	4160	4650	5310
28 Day Average	3030	4430	5750	6240	7080

Ingredients
Cement: Holcim I-II
Coarse Aggregate: Castle Concrete # 57/67
Fine Aggregate: Daniels Sand CO.
Chemical Admixtures: BASF 200 N (WRA), Polyheed 1020 (WRA) & AE-90 (Air Entrainer)
Fly Ash: Class F

Material Certification Report

Material:	Portland Cement	Test Period:	01-Nov-2010
Type:	I-II (MH)(ASTM C 150)	To:	30-Nov-2010

Certification

Holcim cement meets the specifications of ASTM C 150 for Type I-II cement.

General Information

Supplier:	Holcim (US) Inc.	Source Location:	Portland Plant
Address:	3500 State Highway 120		3500 State Highway 120
	Florence, Co. 81226		Florence, Co. 81226
Telephone:	719-784-1307	Contact:	Dick Roush
Date Issued:	09-Dec-2010		

The following information is based on average test data during the test period. The data is typical of cement shipped by Holcim; individual shipments may vary.

Tests Data on ASTM Standard Requirements

Chemical			Physical		
Item	Limit[A]	Result	Item	Limit[A]	Result
SiO_2 (%)	-	19.8	Air Content (%)	12 max	6
Al_2O_3 (%)	6.0 max	4.7	Blaine Fineness (m^2/kg)	260 min	393
Fe_2O_3 (%)	6.0 max	3.2			
CaO (%)	-	63.1			
MgO (%)	6.0 max	1.5	Autoclave Expansion (%) (C 151)	0.80 max	0.00
SO_3 (%)[C]	3.0 max	3.4	Compressive Strength MPa (psi):		
Loss on Ignition (%)	3.0 max	2.5			
Insoluble Residue (%)	0.75 max	0.39	3 days	12.0 (1740) min	30.8 (4470)
CO_2 (%)	-	1.3	7 days	19.0 (2760) min	36.0 (5220)
Limestone (%)	5.0 max	3.6			
$CaCO_3$ in Limestone (%)	70 min	83	Initial Vicat (minutes)	45-375	132
Inorganic Processing Addition	5.0 max	0.0			
Potential Phase Compositions[D]:			Mortar Bar Expansion (%) (C 1038)	-	0.003
C_3S (%)	-	56			
C_2S (%)	-	13	Heat of Hydration: 7 days, kJ/kg (cal/g)[B]	-	354 (85)
C_3A (%)	8 max	7			
C_4AF (%)	-	10			
$C_3S + 4.75C_3A$ (%)	-	89			

Tests Data on ASTM Optional Requirements

Chemical			Physical		
Item	Limit[A]	Result	Item	Limit[A]	Result
Equivalent Alkalies (%)		0.69			

Notes

[A] Dashes in the limit / result columns mean Not Applicable.

[B] Test result represents most recent value and is provided for information only. Analysis of Heat of Hydration has been carried out by CTLGroup, Skokie, IL.

[C] It is permissible to exceed the specification limit provided ASTM C 1038 Mortar Bar Expansion does not exceed 0.020 %.

[D] Adjusted per Annex A1.6 of ASTM C150 and AASHTO M85.

This data may have been reported on previous mill certificates. It is typical of the cement being currently shipped.

SRMG
Salt River Materials Group

PHOENIX CEMENT

Transit Mix Concrete
Attn: Robert Montoya
444 E Costilla St.
Colorado Springs, CO 80903-3761

Corporate Headquarters
8800 E Chaparral Rd, Ste 155
Scottsdale, AZ 85250
Phone: 480-850-5757
Fax: 480-850-5758

Cement Manufacturing
3000 W Cement Plant Rd
Clarkdale, AZ 86324
Phone: 928-634-2261
Fax: 928-634-3543

19th Avenue Facility
1802 W Lower Buckeye Rd
Phoenix, AZ 85007
Phone: 602-253-9149
Fax: 602-253-9160

Lower Buckeye Facility
1941 W Lower Buckeye Rd
Phoenix, AZ 85009
Phone: 602-258-7798
Fax: 602-525-3362

21st Avenue Facility
1325 N 21st Avenue
Phoenix, AZ 85009
Phone: 602-254-3824
Fax: 602-254-3825

Mesa Community Storage
Dobson & McKellips
Mesa, AZ 85211
Phone: 480-990-7847

Cholla Fly Ash Facility
P O Box 380
Joseph City, AZ 86032
Phone: 928-288-1661
Fax: 928-288-1663

Four Corners Fly Ash Facility
P O Box 1007
Fruitland, NM 87416
Phone: 505-598-8657
Fax: 505-598-8633

San Juan Fly Ash Facility
San Juan Generating Station
Waterflow, NM 87421
Phone: 505-598-7546
Fax: 505-598-7547

Escalante Fly Ash Facility
CR19 / P O Box 620
Prewitt, NM 87405
Phone: 505-285-4590
Fax: 505-285-4667

Gallup Fly Ash Facility
9001/4 N 9th St.
Gallup, NM 87305

Product: Class F Fly Ash, Cholla Fly Ash
ASTM C 618

POZZOLAN TEST REPORT

12-20-10 Ctl#: 49052

Lot: 2060	**Results**	**Specifications**
Chemical Analysis (C311 / C114 / D4326)		
Silicon Dioxide, SiO_2	58.75 %	---
Aluminum Oxide, Al_2O_3	23.97 %	---
Ferric Oxide, Fe_2O_3	5.57 %	---
$SiO_2+Al_2O_3+Fe_2O_3$	88.29 %	70.00 Min
Calcium Oxide, CaO	3.14 %	---
Magnesium Oxide, MgO	1.05 %	---
Sulfur Trioxide, SO_3	0.30 %	5.00 Max
Moisture Content	0.14 %	3.00 Max
Loss on Ignition	0.26 %	6.00 Max
Available Alkalis as Na_2O	0.22 %	---
Alkalis (%Na_2O + 0.658% K_2O)	1.50 %	---
R Factor (%CaO -5) / (%FeO)	-0.33 %	---
Physical Analysis		
Fineness, amount retained on #325 sieve, % (C430)	16.10	34.00 Max
variation, points from average	0.73	5.00 Max
Density, g/cm³ (C188)	2.20	---
Variation from average, %	0.00	5.00 Max
Strength Activity Index with Portland Cement (C311 / C109)		
at 7 days, % of cement control	86.60	---
at 28 days, % of cement control	88.03	75.00 Min
Water Requirement (C311)		
% of cement control	95.45	105.00 Max
Soundness, autoclave expansion (C311 / C151)		
or contraction, %	-0.03	0.80 Max

All tests have been made in strict accordance with the current standards of the American Society for Testing and Materials covering the type of material specified.

Lee Gorby, Quality Assurance Manager
26 JAN 2011

BASF

The Chemical Company

January 27, 2011

Transit Mix Concrete CO
444 East Costilla
Colorado Springs, Colorado 80903

Attention: Robert Montoya
Project: Various
Project location: Various

Certificate of Conformance
MB-AE™ 90
BASF Construction Chemicals, LLC* Air-Entraining Admixture for Concrete

*(successor in interest to BASF Construction Chemicals, LLC , which is successor by merger to BASF Admixtures, Inc., formerly known as Degussa Admixtures, Inc., formerly known as Master Builders, Inc.)

I, Richard Hubbard, Sr. Technical Marketing Specialist for BASF Corporation, Cleveland, Ohio,certify:

That MB-AE 90 is a BASF Corporation Air-Entraining Admixture for concrete; and

That no calcium chloride or chloride based ingredient is used in the manufacture of MB-AE 90; and

That MB-AE 90, based on the chlorides originating from all the ingredients used in its manufacture, contributes less than 0.000068 percent (0.68 ppm) chloride ions by weight of the cement when used at the rate of 65 mL per 100 kg (1 fluid ounce per 100 pounds) of cement; and

That MB-AE 90 meets the requirements of ASTM C 260, Corps of Engineers' CRD-C 13 and AASHTO M154, the Standard Specifications for Air-Entraining Admixtures for Concrete.

Richard Hubbard
Sr. Technical Marketing Specialist, BASF Corporation

BASF Corporation
23700 Chagrin Boulvard
Cleveland, OH 44122
216 839-7500 ph
www.masterbuilders.com

Master Builders
Admixture Solutions

BASF

The Chemical Company

January 27, 2011

Transit Mix Concrete CO
444 East Costilla
Colorado Springs, Colorado 80903

Attention: Robert Montoya
Project: Various
Project location: Various

Certificate of Conformance
PolyHeed® 1020
BASF Corporation* Admixture for Concrete

*(successor in interest to BASF Construction Chemicals, LLC , which is successor by merger to BASF Admixtures, Inc., formerly known as Degussa Admixtures, Inc., formerly known as Master Builders, Inc.)

I, Richard Hubbard, Sr. Technical Marketing Specialist for BASF Corporation, Cleveland, Ohio,certify:

That PolyHeed 1020 is a BASF Corporation Mid-Range Water-Reducing Admixture for concrete; and

That no calcium chloride or chloride based ingredient is used in the manufacture of PolyHeed 1020; and

That PolyHeed 1020, based on the chlorides originating from all the ingredients used in its manufacture, contributes less than 0.00014 percent (1.4 ppm) chloride ions by weight of the cement when used at the rate of 65 mL per 100 kg (1 fluid ounce per 100 pounds) of cement; and

That, depending on the dosage used, PolyHeed 1020 meets the requirements for a Type A, Water-Reducing and Type F, Water-Reducing, High Range Admixture specified in ASTM C 494, Corps of Engineers' CRD-C 87 and AASHTO M194, the Standard Specifications for Chemical Admixtures for Concrete.

Richard Hubbard III

Richard Hubbard
Sr. Technical Marketing Specialist, BASF Corporation

BASF Corporation
23700 Chagrin Boulvard
Cleveland, OH 44122
216 839-7500 ph
www.masterbuilders.com

Master Builders
Admixture Solutions

BASF

The Chemical Company

January 27, 2011

Transit Mix Concrete CO
444 East Costilla
Colorado Springs, Colorado 80903

Attention: Robert Montoya
Project: Various
Project location: Various

Certificate of Conformance
Pozzolith® 200 N
BASF Corporation* Admixture for Concrete

*(successor in interest to BASF Construction Chemicals, LLC , which is successor by merger to BASF Admixtures, Inc., formerly known as Degussa Admixtures, Inc., formerly known as Master Builders, Inc.)

I, Richard Hubbard, Sr. Technical Marketing Specialist for BASF Corporation, Cleveland, Ohio,certify:

That Pozzolith 200 N is a BASF Corporation Water-Reducing Admixture for concrete; and

That no calcium chloride or chloride based ingredient is used in the manufacture of Pozzolith 200 N; and

That Pozzolith 200 N, based on the chlorides originating from all the ingredients used in its manufacture, contributes less than 0.00013 percent (1.3 ppm) chloride ions by weight of the cement when used at the rate of 65 mL per 100 kg (1 fluid ounce per 100 pounds) of cement; and

That, depending on the dosage used, Pozzolith 200 N meets the requirements for a Type A, Water-Reducing, Type B, Retarding, and Type D, Water Reducing and Retarding Admixture as specified in ASTM C 494, Corps of Engineers' CRD-C 87 and AASHTO M194, the Standard Specifications for Chemical Admixtures for Concrete.

Richard Hubbard III

Richard Hubbard
Sr. Technical Marketing Specialist, BASF Corporation

BASF Corporation
23700 Chagrin Boulvard
Cleveland, OH 44122
216 839-7500 ph
www.masterbuilders.com

Master Builders
Admixture Solutions

Transit Mix Concrete Co. Materials Laboratory

444 East Castilla Avenue
Colorado Springs, Colorado 80903
Ph. (719) 475-0700 Fax (719) 475-0226

2596 Hwy 96 East
Pueblo, Colorado 81002
Ph. (719) 543-7898 Fax (719) 583-0345

October 18, 2010

RE: No. 57/67 Coarse Concrete Aggregate
Transit Mix of Pueblo
Pueblo, CO 81002

Gentlemen:

This letter presents the results of physical properties and deleterious substances tests performed on a coarse aggregate that was sampled on September 8, 2010 at Transit Mix of Pueblo Aggregate Pit. The results are as follows:

Sieve Size	Percent Passing	Specifications	
		No. 57	No. 67
37.5 mm, 1 1/2"	100	100	----
25.0 mm, 1"	100	95 - 100	100
19.0 mm, 3/4"	90	----	90 - 100
12.5 mm, 1/2"	48	25 - 60	----
9.5 mm, 3/8"	26	----	20 - 55
4.75 mm, No. 4	3.8	0 - 10	0 - 10
2.36 mm, No. 8	1.3	0 - 5	0 - 5
75 um, No. 200	0.4	0 - 1.5	0 - 1.5

Los Angeles Abrasion (Grading B):	29.0% Loss	AASHTO T-96
Bulk Specific Gravity (SSD):	2.63 Absorption: 1.0%	AASHTO T-85
Magnesium Sulfate Soundness (Five Cycles):	3.0% Loss	AASHTO T-104
Sodium Sulfate Soundness (Five Cycles):	1.0% Loss	AASHTO T-104
Clay Lumps and Friable Particles:	0	AASHTO T-112
Fractured Particles (2 Fractured Faces):	77%	ASTM D 5821
Organic Impurities:	Clear	AASHTO T-21
Bulk Density by Rodding:	98 lb/ft^3 Voids: 40%	AASHTO T-19
Mortar Bar Expansion, (ASR) - Sodium Hydroxide:	0.06%	ASTM C 1260

The above sample was tested according to American Society for Testing and Materials (ASTM) procedures D-75, C-702, C-117, C-136, C-33, C-40, C-142, C-88, C-127, C-131, C-29 and C-1260.
The above sample conforms to the requirements of ASTM C 33, TABLE 3, *Limits for Deleterious Substances and Physical Property Requirements of Coarse Aggregate for Concrete, 1S, 2S, 3S, 4S, 5S, 1M, 2M, 3M, 4M, 5M, 1N and 2N).*
If you have any questions feel free to contact me at your earliest convenience.

Respectfully Submitted,

Grant W. Smith
Quality Control Manager

Transit Mix Concrete Co. Materials Laboratory

444 East Costilla Avenue
Colorado Springs, Colorado 80903
Ph. (719) 475-0700 Fax (719) 475-0226

2596 Hwy 96 East
Pueblo, Colorado 81002
Ph. (719) 543-7898 Fax (719) 583-0345

Modified ASTM C 1260 / C 1567 Tests No. 001709T

Standard Test Method for Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali-Silica Reaction

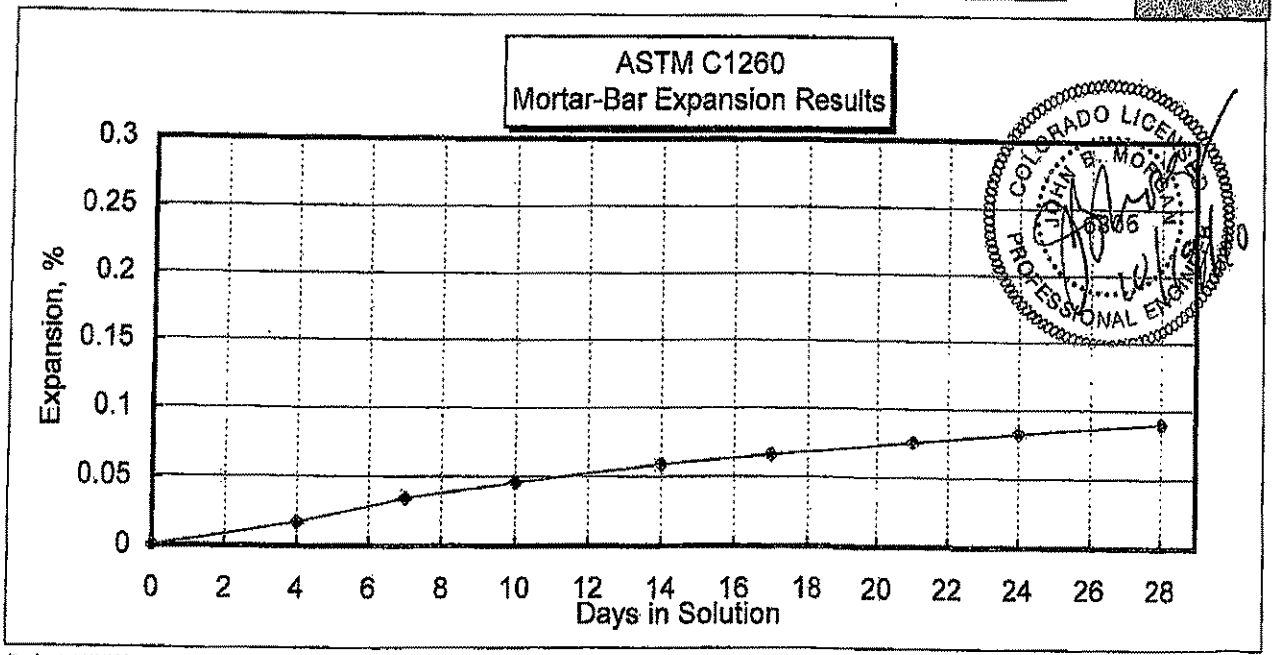
Materials	Source	Type	Qty.	Batch Weights, g	Notes
Cement	Holcim Florence, CO	I/II LA	100%	440	Batched: 9/15/2010
Flyash			0%	0	Solution: Sodium Hydroxide
Coarse	TMOP Pueblo, CO	57/67	100%	990	
Sand					
Water				206.8	
W/C Ratio				0.47	Completed: 10/15/2010

Specimen ID: TMOP67 1, 2, 3

Days	Date	Comparator Readings			Mortar Bar Expansion, %			Average
		1	2	3	1	2	3	
0	9/17/2010	0.1656	0.1674	0.1701				0.0000
4	9/21/2010	0.1671	0.1693	0.1719	0.0150	0.0190	0.0180	0.0173
7	9/24/2010	0.1684	0.1714	0.1737	0.0280	0.0400	0.0360	0.0347
10	9/27/2010	0.1693	0.1722	0.1754	0.0370	0.0480	0.0530	0.0460
14	10/1/2010	0.1706	0.1736	0.1767	0.0500	0.0620	0.0660	0.0593
17	10/4/2010	0.1714	0.1741	0.1775	0.0580	0.0670	0.0740	0.0663
21	10/8/2010	0.1723	0.1751	0.1785	0.0670	0.0770	0.0840	0.0760
24	10/11/2010	0.1730	0.1757	0.1793	0.0740	0.0830	0.0920	0.0830
28	10/15/2010	0.1738	0.1765	0.1799	0.0820	0.0910	0.0980	0.0903

Average Percent Expansion at 14 days in solution (16 days of age) **0.06**

Average Percent Expansion at 28 days in solution (30 days of age) ***INFORMATIONAL PURPOSES ONLY!*** 0.09



Revised: 11/1/2009

Transit Mix Concrete Co. Materials Laboratory

444 East Costilla Avenue
Colorado Springs, Colorado 80903
Ph. (719) 475-0700 Fax (719) 475-0226

2596 Hwy 96 East
Pueblo, Colorado 81002
Ph. (719) 543-7898 Fax (719) 583-0345

October 18, 2010

Daniels Sand Company
3710 Bradley Road
Colorado Springs, Colorado 80916

RE: Fine Concrete Aggregate

Gentlemen:

This letter presents the results of physical properties and deleterious substances tests performed on a Fine Concrete Aggregate that was sampled on September 9, 2010 at Daniels Sand Pit.
The results are as follows:

Sieve Size	Percent Passing	Specifications ASTM C 33 Fine Concrete Agg.
9.5 mm, 3/8"	100	100
4.75 mm, No. 4	100	95 - 100
2.36 mm, No. 8	88	80 - 100
1.18 mm, No. 16	62	50 - 85
600 um, No. 30	40	25 - 60
300 um, No. 50	21	10 - 30
150 um, No. 100	7.0	0 - 10
75 um, No. 200	0.8	0 - 3

Fineness Modulus: 2.80		AASHTO T-37
Bulk Specific Gravity (SSD): 2.59 Absorption: 1.1%		AASHTO T-85
Magnesium Sulfate Soundness (Five Cycles): 2.0% Loss		AASHTO T-104
Sodium Sulfate Soundness (Five Cycles): 1.0% Loss		AASHTO T-104
Clay Lumps and Friable Particles: 0		AASHTO T-112
Average Sand Equivalent: 88		AASHTO T-176
Organic Impurities: Clear		AASHTO T-21
Mortar Bar Expansion (ASR) - Sodium Hydroxide:	0.04%	AASHTO T-303

The above sample was tested according to American Society for Testing and Materials (ASTM) procedures D-75, D-2419, C-702, C-117, C-136, C-33, C-40, C-142, C-88, C-128 and C-1260.

If you have any questions feel free to contact me at your earliest convenience.

Respectfully Submitted,

Grant W. Smith
Quality Control Manager

COLORADO LICENSED
JOHN B. MORGAN
6806
PROFESSIONAL ENGINEER
10/26/10

Transit Mix Concrete Co. Materials Laboratory

444 East Costilla Avenue
Colorado Springs, Colorado 80903
Ph. (719) 475-0700 Fax (719) 475-0226

2596 Hwy 96 East
Pueblo, Colorado 81002
Ph. (719) 543-7898 Fax (719) 583-0345

Modified ASTM C 1260 / C 1567 Tests No. 0050D-9-9

Standard Test Method for Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali-Silica Reaction

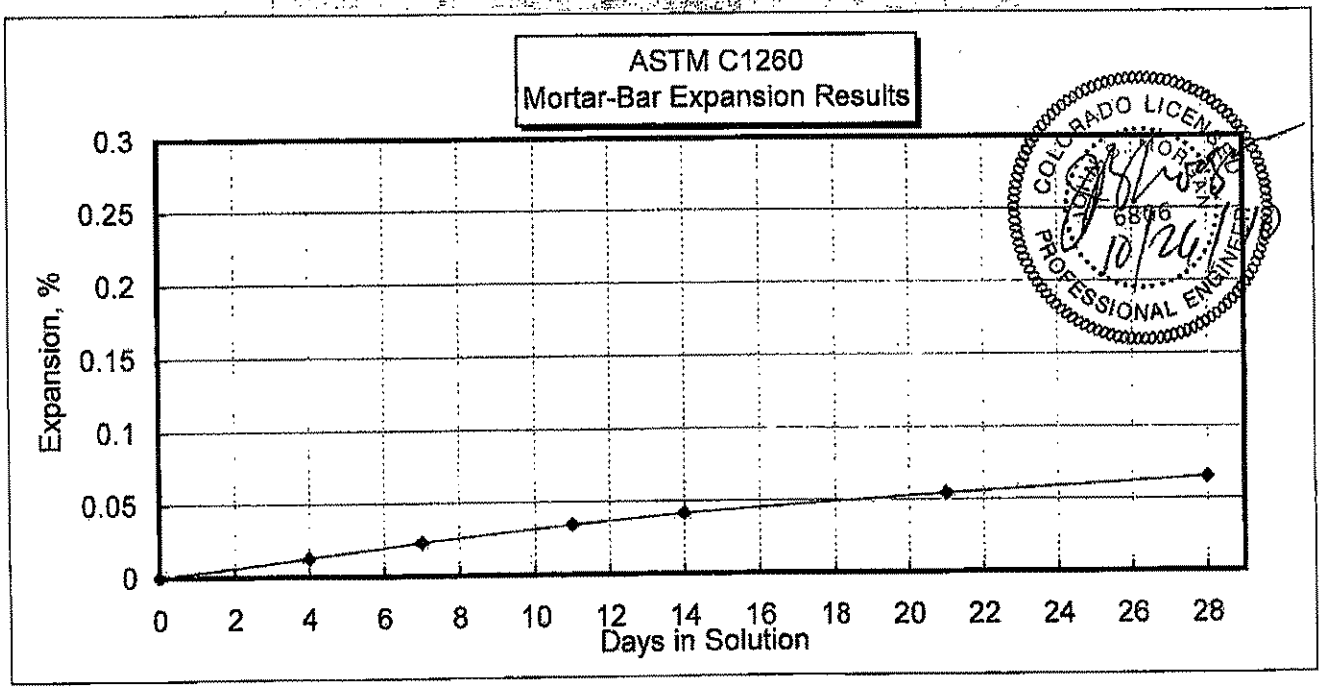
Materials	Source		Batch Weights, g	Notes
Cement	Holcim Florence, CO	100%	440	Batched: 9/14/2010
Flyash		0%	0	
Coarse				
Sand	Daniels Colo Spgs, CO		990	Daniels Fine Concrete Aggregate
Water			206.8	
W/C Ratio			0.47	Completed: 10/14/2010

Specimen ID: DansFA 1, 2, 3

Days	Date	Comparator Readings			Mortar Bar Expansion, %			Average
		1	2	3	1	2	3	
0	9/16/2010	0.1755	0.1707	0.1689				0.0000
4	9/20/2010	0.1768	0.1720	0.1701	0.0130	0.0130	0.0120	0.0127
7	9/23/2010	0.1777	0.1730	0.1713	0.0220	0.0230	0.0240	0.0230
11	9/27/2010	0.1788	0.1742	0.1725	0.0330	0.0350	0.0360	0.0347
14	**9/30/2010**	**0.1795**	**0.1749**	**0.1733**	**0.0400**	**0.0420**	**0.0440**	**0.0420**
21	*10/7/2010*	*0.1810*	*0.1763*	*0.1742*	*0.0550*	*0.0560*	*0.0530*	*0.0547*
28	*10/14/2010*	*0.1822*	*0.1774*	*0.1752*	*0.0670*	*0.0670*	*0.0630*	*0.0657*

Average Percent Expansion at 14 days in solution (16 days of age) **0.04**

28 Day expansion results are for informational purposes only *0.07*



Revised: 11/1/2009

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June 15, 2011

Mr. Wes Weaver, President
Weaver General Construction Co.
3679 South Huron Street, Suite 404
Englewood, CO 80110

Via Email to: wes@weavergc.com
No Hard Copy to Follow

Re: Harold D. Thompson Regional Water Reclamation Facility (HDTRWRF)
Lower Fountain Metropolitan Sewage Disposal District (LFMSDD)

Dear Wes:

Reference is made to your shop submittal identified as follows:

Submittal No.:	03300-010
Date of Submittal:	June 6, 2011
Title:	Concrete Mix Design for Walls and Slabs of Secondary Clarifiers
Specification Section:	03300
Manufacturers:	Transit Mix Concrete Co.; BASF Construction Chemicals, LLC

The referenced submittal has been stamped ***"Make Corrections Noted"***. Our comments are as follows:

1. The slump of the submitted mix design is indicated as 4" maximum. The project specifications require a 3" maximum slump for liquid-containing structures. As placement methods will affect the concrete properties, the Contractor shall be responsible for implementing the correct placement methods so the final mix design specifications are met at the point of delivery into the formwork. Minor adjustments to the mix design may be required in order to meet the mix design specifications at the point of delivery, depending upon site conditions at the time of concrete placement. Close coordination between the Contractor and his supplier and/or subcontractor will be required to ensure the concrete is batched, transported and placed appropriately to meet the project specifications at the point of placement.

2. The submittal documents included two tables of compressive strength versus water/cement ratio. The first table, which is signed and sealed by a registered professional engineer in the State of Colorado, has very little information that is legible. The second table is not signed and sealed but is legible. From the legible data, it appears these two tables are identical. Please verify whether or not these tables are identical. If they are not, please submit a legible copy of the first table signed and sealed by the Colorado professional engineer.

Please call if you should have any questions.

Sincerely,

Mark A. Morton, P.E.

MAM/kmw

ec (letter only):
Mr. Jim Heckman, Manager, LFMSDD, lfmanager@lfmsdd.org
Ms. Cindy Murray, Office Manager, Fountain Sanitation District, fsdistrict@qwestoffice.net
Mr. Jeff Burst, Project Superintendent, Weaver General Construction Co., jeff@weavergc.com
Mr. John Jacob, Project Manager, Weaver General Construction Co., john@weavergc.com
Ms. Leslie Brown, Weaver General Construction Co., leslie@weavergc.com
cc: Mr. Jerry Miller, Resident Project Representative, GMS, Inc.