



PIPELINE SCHEMATIC	HORIZONTAL STATIONS (2D)	SLOPE STATIONS (3D)	STATION DESCRIPTION
HEAVY WALL PIPE	1430+00	MATCHLINE 1430+00	MATCHLINE 1430+00
WELD FITTING	1431+78 P.I. 05119572 LT.	1431+78 P.I. 05119572 LT.	1431+78 P.I. 05119572 LT.
TRANSITION PIECE	1432+16 P.I. 07242361 LT.	1432+16 P.I. 07242361 LT.	1432+16 P.I. 07242361 LT.
CASING PIPE	1433+34 P.I. 05121215 RT.	1433+34 P.I. 05121215 RT.	1433+34 P.I. 05121215 RT.
CONCRETE COATING	1434+27 P.I. 04212185 RT.	1434+27 P.I. 04212185 RT.	1434+27 P.I. 04212185 RT.
SET-ON WELD	1435+51 P.I. 05120297 RT.	1435+51 P.I. 05120297 RT.	1435+51 P.I. 05120297 RT.
PIPELINE WARNING SIGN	1437+18 P.I. 01313637 LT.	1437+18 P.I. 01313637 LT.	1437+18 P.I. 01313637 LT.
PIPELINE MARKER	1448+90 P.I. 00716532 RT.	1448+90 P.I. 00716532 RT.	1448+90 P.I. 00716532 RT.
MATERIAL ITEM	1451+40 FENCE (BARBED WIRE)	1451+40 FENCE (BARBED WIRE)	1451+40 FENCE (BARBED WIRE)
GROUNDING MAT	1453+42 P.I. 00723226 RT.	1453+42 P.I. 00723226 RT.	1453+42 P.I. 00723226 RT.
ZINC RIBBON	1459+77 P.I. 00716532 RT.	1459+77 P.I. 00716532 RT.	1459+77 P.I. 00716532 RT.
AERIAL MARKER	1464+41 P.I. 44141061 LT.	1464+41 P.I. 44141061 LT.	1464+41 P.I. 44141061 LT.
CATHODIC TEST STATION	1468+46 P.I. 04140922 LT.	1468+46 P.I. 04140922 LT.	1468+46 P.I. 04140922 LT.
MAINLINE VALVE	1471+24 M.P. 435	1471+24 M.P. 435	1471+24 M.P. 435
CHECK VALVE	1473+45	1473+45	1473+45
OPEN CUT	1474+00	1474+00	1474+00
BORE	1477+20	1477+20	1477+20
DRINKING WATER USA	1480+46	1480+46	1480+46
ECOLOGICAL USA	1481+12	1481+12	1481+12
HIGHLY POPULATED AREA	1488+77	1488+77	1488+77
OPERATOR (KEYSTONE) OWNED	1490+46	1490+46	1490+46
OTHER POPULATED AREA	1490+46	1490+46	1490+46
SOURCE WATER PROTECTION AREA	1490+46	1490+46	1490+46
WELLHEAD PROTECTION AREA	1490+46	1490+46	1490+46

TEST SECTIONS (3D)	TEST SECTIONS (3D)
TOPSOIL SALVAGE METHOD	TEST SECTION 4B-2 ILTO-028-2010
STREAMS	
WETLANDS	
TIMING CONSTRAINTS	
STATIONS	
MONITORING	
RECLAMATION	
SPECIAL CONSIDERATIONS	

- GENERAL NOTES**
- ALL CHAINAGES ARE IN FEET UNLESS OTHERWISE SPECIFIED.
 - DATUM ELEVATION AND PROJECTION ARE BASED ON MEAN SEA LEVEL AND NAD 83.
 - FIELD PIPE LOCATING REQUIRED TO DETERMINE PLACEMENT OF PIPELINE WITHIN PERMANENT EASEMENT.
 - UNLESS OTHERWISE NOTED, 48 INCHES MINIMUM COVER EXCEPT 36 INCHES IN AREAS OF CONSOLIDATED ROCK.
 - NO ACTUAL AS-BUILT GROUND SHOTS WERE TAKEN AT THIS LOCATION. THE PROFILE REPRESENTS A PROJECTION FROM SHOTS TAKEN AT 150' TO 250' INTERVALS.
 - TWO TYPES OF COATING WERE APPLIED TO THE FIELD WELDS DURING THE ORIGINAL CONSTRUCTION. ONE TYPE WAS TWO COMPONENT LIQUID EPOXY. THE PRODUCTS USED WERE DENSO 7200 OR SPC SP-2888. THE OTHER TYPE THAT WAS APPLIED TO THE FIELD WELDS WAS FBE, THE PRODUCT NAME WAS 3M 6223 11G.
 - THE SUBSTANTIAL CONSTRUCTION COMPLETION DATE, BASED ON CALIPER PIG RUN, WAS AUGUST 17, 2009 FOR M.P. 403.9 TO 422.96 AND OCTOBER 28, 2009 FOR M.P. 422.96 TO 463.18.
 - ORIGINAL IN-SERVICE DATE OF THE KEYSTONE PIPELINE (PHASE 1): JUNE 30, 2010.
 - CPS CALCULATION DATE: MAY 2010.
 - ORION STATION SERIES NUMBER: 1182700.
 - TO DETERMINE THE MILE POST AT A GIVEN LOCATION, ADD THE 3D STATION NUMBER FROM THIS SEGMENT TO STATION NUMBER 21486-76 AND DIVIDE BY 5280.

OPERATING AND TEST PRESSURE

- THE MAXIMUM OPERATING PRESSURE (MOP) IS 1440 PSIG.
- THE MINIMUM TEST PRESSURE WAS 160 PSIG.

BILL OF MATERIALS (3D)

ITEM NO.	DESCRIPTION	QUANTITY
3	30" O.D. X 0.516" W.T. API-SLX-70 WFBE COATING & ABRASION RESISTANT OVERCOAT	1,710'
6	30" O.D. X 0.429" W.T. API-SLX-70 WFBE COATING	11,299'
115A	W2.4 FEET LONG 30" O.D. X 0.429" W.T. API-SLX-70 PUPS	1 EA
	PIPELINE MARKERS	0 EA
	PIPELINE WARNING SIGNS	7 EA
	CATHODIC TEST STATION	4 EA
	AERIAL MARKER	1 EA

REFERENCE DRAWINGS

REF. NO.	DRAWING NO.	REV. NO.	DRAWING TITLE

REVISIONS

NO.	DATE	REV. BY	CHKD. BY	APP'D. BY	DESCRIPTION
1	5/17/08	UEI	RDG	LAG	ISSUED FOR CONSTRUCTION
2	9/17/18	UEI			ISSUED FOR AS-BUILT
					1836-03-ML-02-017
					REPLACES COVERAGE OF IFC DRAWINGS
					1836-03-ML-02-018
					1836-03-ML-02-019
					1835-03-ML-02-020

ENGINEERING RECORDS

DRAWN BY	INITIAL	DATE	ENY. APPRD.	INITIAL	DATE
UEI		10/03/01			

PROFESSIONAL ENGINEER

NAME	STATE	LIC#	REV#	DATE
LOYS ALVIN GRAY, III	SD	CE9004		

SCALE: 0 125 250 500 Feet

KEYSTONE MAINLINE (NPS 30 2009) FREEMAN SECTION
SPREAD 4B DISCIPLINE 03

AS-BUILT ALIGNMENT

M.P. 434.25 TO M.P. 436.72
SHEET 12 OF 13 SHEETS
STA. 1431+85 TO STA. 1561+94 (3D)
DRAWING NO. 1836-03-ML-02-012 REV. 2