

LEGEND

- OVERBURDEN
- LAKE/POND BOUNDARY
- HD83-2 HAMMER BORING
- DH 83-2 CORE HOLE

PREVIOUS EXPLORATION

BOREHOLES AND TEST PITS

- DR-27 1978 CORPS OF ENGINEERS ROTARY DRILL BORING
- AP-21 1978 CORPS OF ENGINEERS AUGER BORING
- AH-D-12 1980 ACRES AMERICAN, INC., AUGER BORING
- AH-D-15 1982 ACRES AMERICAN, INC., AUGER/ROTARY/CORE BORING
- TP-11 1978 CORPS OF ENGINEERS BACKHOE TEST PIT
- W80-282 1980 ACRES AMERICAN, INC., BULK SAMPLE LOCATION
- W82-26 1982 ACRES AMERICAN, INC., BULK SAMPLE LOCATION

GEOPHYSICAL SURVEYS

- SEISMIC REFRACTION SURVEY LINE
- DM-A 1975 DAMES & MOORE
- SW-3 1978 SHANNON & WILSON, INC.
- SL80-9 1980-82 WOODWARD-CLYDE CONSULTANTS

NOTES:

- BASE TOPOGRAPHIC CONTOURS FROM 2011 MSB LIDAR IMAGERY. CONTOUR INTERVAL IS 5 FEET.
- ALASKA STATE PLANE COORDINATES IN FEET, NAD 83.
- REFER TO USACE (1975, 1979), ACRES (1982a, 1982b) AND HARZA-EBASCO (1983, 1984) GEOTECHNICAL REPORTS.



0	HISTORIC DATA FROM OTHERS	MSF 12/05/12	Project No. 103-95560
			Date 1/24/2013
			Designed M.BRUEN
			Drawn A. GARRIGUS
			Approved M.BRUEN
REV	DESCRIPTION	BY	DATE
CONCEPTUAL DESIGN PHASE			
NOT FOR CONSTRUCTION This document is designated "interim" and not suitable for construction. As an interim document, it may contain data that is incomplete or define and locate structures that remain to be optimized.			
STATE OF ALASKA ALASKA ENERGY AUTHORITY 			SCALE 1"=800' CUSTOM SIZE 30.57" X 13.60" FULL SIZED
SUSITNA-WATANA HYDROELECTRIC PROJECT RELICT CHANNEL / BORROW SITE D EXPLORATION PLAN - 1985			Sheet No. FIG 4 SHEET OF

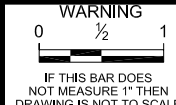


Figure 5. Dam Site Proposed Exploration Plan - 2014

This figure contains Critical Energy Infrastructure Information (CEII), which is being withheld from public viewing, in accordance with FERC's Order No. 630-A.

DO NOT RELEASE.

Figure 6. Relict Channel / Borrow Site D 2014 Exploration Plan

This figure contains Critical Energy Infrastructure Information (CEII), which is being withheld from public viewing, in accordance with FERC's Order No. 630-A.

DO NOT RELEASE.

Figure 7. Proposed Infrastructure and Reservoir Areas Exploration Plan - 2014

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DO NOT RELEASE.

Figure 8. Dam Proposed Winter / Summer Exploration Plan - 2015

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DO NOT RELEASE.

Figure 9. Proposed Seismic Hazard Study Areas - 2014

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DO NOT RELEASE.

GEOTECHNICAL INSTRUMENTATION SUMMARY			
DH NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
AH-D5	3231048	1888216	2225
AH-D07	3231795	1889914	2215
AH-D11	3236010	1893868	2362
AH-D30	3230825	1886751	2229
BH-3	3227960	1884138	2156
BH-6	3226685	1884291	1617
BH-8	3225349	1884517	1984
DH-12	3225501	1884655	1953
DH-23	3225497	1884653	1954
DH-24	3225125	1884762	2062
DH-28	3225486	1883616	1976
DH12-1	3225828	1885044	1878
DH12-2	3225533	1884943	1961
DH12-3	3227091	1885107	1712
DH12-4	3226857	1884848	1630
DH12-5	3226024	1886861	2001
DH12-6	3225803	1885929	1935
DH12-7	3226407	1887554	2025
DH12-8	3226359	1884985	1462
DH84-1	3229319	1886629	2150
DH84-2	3227572	1883978	2029
DH84-4	3228998	1885849	2168
DH84-4a	3228956	1885809	2175
DH84-6	3226947	1883209	1530
DH84-8	3227197	1883148	1685
DH84-9	3229324	1885896	2168
DH84-10	3228996	1885848	2168
DR-22	3231965	1886840	2233
G11-DH01	3222597	1884686	2565
G11-DH02	3223063	1884284	2487
G11-DH03	3223402	1885723	2480
HD83-2	3229270	1886140	2152
HD83-6	3230029	1884824	2216
HD83-8	3228617	1885464	2224
HD83-49	3230472	1885307	2210

DRILL HOLE LEGEND

DH12-6 2012 DRILL HOLE

G11-DH03 2011 DRILL HOLE

HD83-6 1978 - 1984 DRILL HOLE

- NOTES:
1. BASE TOPOGRAPHIC CONTOURS FROM 2011 MSB LIDAR IMAGERY. CONTOUR INTERVAL IS 10 FEET.
 2. ALASKA STATE PLANE COORDINATES IN FEET, NAD 83.
 3. ELEVATIONS ON NAVD88 VERTICAL DATUM
 4. GEOTECHNICAL INSTRUMENTATION INSTALLED IN DRILL HOLES INCLUDES PIEZOMETERS (VIBRATING WIRE, PNEUMATIC AND OPEN STANDPIPE), AND MULTI-POINT THERMISTOR STRINGS OR THERMAL PROBES. SEE USACE (1979); ACRES (1982A, 1982B); HARZA-EBASCO (1983, 1984); GOLDER (2012, 2013).
 5. ADDITIONAL INSTRUMENTATION INSTALLED IN 2014-15 WILL BE INCLUDED IN FUTURE MONITORING

REV	DESCRIPTION	BY	DATE		

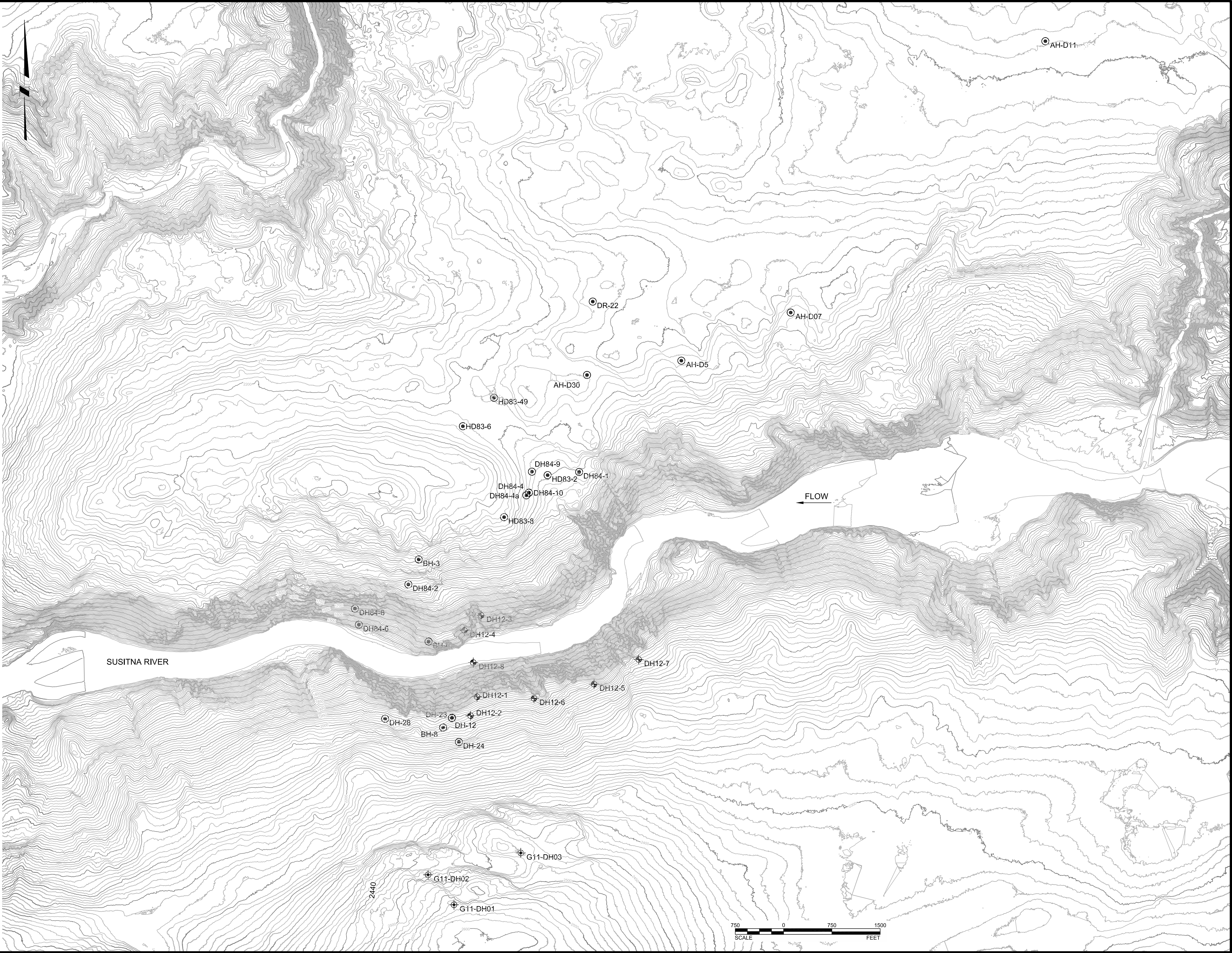


Figure 11. Proposed Exploratory Adits Plan

This figure contains Critical Energy Infrastructure Information (CEII), which is being withheld from public viewing, in accordance with FERC's Order No. 630-A.

DO NOT RELEASE.

Figure 12. Microseismic Stations Location Plan

This figure contains Critical Energy Infrastructure Information (CEII), which is being withheld from public viewing, in accordance with FERC's Order No. 630-A.

DO NOT RELEASE.

2014-15 Susitna-Watana Geotechnical Investigations Schedule

Activity ID	Activity Name	Original Duration	Start	Finish	2014												2015												2016							
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Susitna Geotech 2014-15 Susitna-Watana Geotech...		729.0d	02-Jan-14	31-Dec-15																																
A1000	2014 GEO NTP	0.0d	02-Jan-14*																																	
A1010	Land Access Authorization	0.0d		26-Feb-14*																																
A1020	Geo Field Camp Decision	0.0d	20-Jan-14*																																	
A1030	Exploratory Adit A Contract Award	0.0d		30-Apr-14*																																
A1040	2015 Complete	0.0d		31-Dec-15*																																
Susitna Geotech.01 Project Management Activities		617.0d	22-Jan-14	30-Sep-15																																
A1050	Kick-off Meeting (2014)	0.0d	22-Jan-14*																																	
A1060	Health and Safety Plan Update	22.0d	22-Jan-14	12-Feb-14																																
A1070	Field Investigation Progress Reports (2014)	163.0d	21-Apr-14*	30-Sep-14																																
A1080	Field Investigation Progress Report (2015)	259.0d	15-Jan-15*	30-Sep-15																																
Susitna Geotech.02 Meetings		500.0d	12-Feb-14	26-Jun-15																																
A1090	Field Planning Workshop (2014)	2.0d	12-Feb-14*	13-Feb-14																																
A1100	Field Planning Workshop (2015)	2.0d	20-Nov-14*	21-Nov-14																																
A1110	Technical Advisor Workshop No. 1 (Geo/Geotech)	2.0d	11-Mar-14*	12-Mar-14																																
A1120	Technical Advisor Workshop No. 2 (Field)	5.0d	04-Aug-14*	08-Aug-14																																
A1130	Technical Advisor Workshop No. 3 (Seismic)	2.0d	08-Oct-14*	09-Oct-14																																
A1140	Technical Advisor Workshop No. 4 (Geo/Geotech)	2.0d	04-Nov-14*	05-Nov-14																																
A1150	Technical Advisor Workshop No. 5 (Geo/Geotech/Field)	4.0d	23-Jun-15*	26-Jun-15																																
Susitna Geotech.03 Subcontract Procurement		471.0d	03-Mar-14	16-Jun-15																																
Susitna Geotech.03.01 Subcontract Procurement (2014)		103.0d	03-Mar-14	13-Jun-14																																
A1160	Planning, Bid, Negotiate, Award - Drilling, Dam Site	51.0d	03-Mar-14*	22-Apr-14																																
A1170	Planning, Bid, Evaluate, Award - Drilling, Infrastructure	54.0d	21-Apr-14*	13-Jun-14																																
A1180	Planning, Bid, Evaluate, Award - Geophysical Surveys	40.0d	03-Mar-14*	11-Apr-14																																
A1190	Planning, Bid, Evaluate, Negotiate, Award - Exploratory Adit	47.0d	03-Mar-14*	18-Apr-14																																
Susitna Geotech.03.02 Subcontract Procurement (2015)		240.0d	20-Oct-14	16-Jun-15																																
A1200	Planning, Bid, Evaluate, Award - Drilling, Dam Site; Winter	80.0d	20-Oct-14*	07-Jan-15																																
A1210	Planning, Bid, Evaluate, Award - Drilling Dam Site, Summer	60.0d	03-Mar-15*	01-May-15																																
A1220	Planning, Bid, Evaluate, Award - Exploratory Adit	40.0d	03-Feb-15*	14-Mar-15																																
A1230	Planning, Bid, Evaluate, Award - Adit In Situ Testing	43.0d	05-May-15*	16-Jun-15																																
Susitna Geotech.04 Permitting, Land Access, Logisti...		513.0d	06-Jan-14	02-Jun-15																																
Susitna Geotech.04.01 Permitting, Land Access, Logistics Suppor...		115.0d	06-Jan-14	30-Apr-14																																
A1240	Permit Support for ADNR, ADF&G, ADOE Permits	54.0d	03-Mar-14*	25-Apr-14																																
A1250	Land Permit Support	51.0d	06-Jan-14*	25-Feb-14																																
A1260	Logistics Plan Support	67.0d	21-Jan-14*	28-Mar-14																																
A1270	Cultural Resource Clearance	10.0d	21-Apr-14*	30-Apr-14																																
Susitna Geotech.04.02 Permitting, Land Access, Logistics Suppor...		226.0d	20-Oct-14	02-Jun-15																																
A1280	Permit Support for ADNR, ADF&G, ADOE Permits	139.0d	10-Nov-14*	28-Mar-15																																
A1290	Land Permit Support	90.0d	20-Oct-14*	17-Jan-15																																
A1300	Logistics Plan Support	118.0d	01-Dec-14*	28-Mar-15																																
A1310	Cultural Resource Clearance	15.0d	19-May-15*	02-Jun-15																																
Susitna Geotech.05 Preparations for Field Investigati...		365.0d	01-May-14	30-Apr-15																																
Susitna Geotech.05.01 Preparations for Field Investigations Progr...		130.0d	01-May-14	07-Sep-14																																
A1320	Brushing and Clearing (2014)	16.0d	01-May-14*	16-May-14																																
A1330	Geo Field Camp (2014)	99.0d	01-Jun-14*	07-Sep-14																																

2014-15 Susitna-Watana Geotechnical Investigations Schedule									
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2014-15 Susitna-Watana Geotechnical Investigations Schedule

Activity ID	Activity Name	Original Duration	Start	Finish				2014												2015												2016					
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
A1790	Prepare Crustal Seismic Source Characterization TM	12.0d	11-Dec-14*	22-Dec-14																																	
A1800	Prepare Probabilistic Seismic Hazard Assessment Draft	89.0d	28-Jul-14*	24-Oct-14																																	
A1810	Prepare Probabilistic Seismic Hazard Assessment Report, Final	10.0d	10-Nov-14*	19-Nov-14																																	
A1820	Prepare Annual Geotech Instrumentation Memorandum, Draft	45.0d	07-Jun-15*	21-Jul-15																																	
A1830	Prepare Annual Geotech Instrumentation Memorandum, Final	10.0d	22-Jul-15*	31-Jul-15																																	
A1840	Prepare Annual Geotech Instrumentation Memorandum, Draft	47.0d	28-Sep-15*	13-Nov-15																																	
A1850	Prepare Annual Geotech Instrumentation Memorandum, Final	8.0d	30-Nov-15*	07-Dec-15																																	
A1860	Prepare Seismicity Report Monitoring No. 1, Draft	40.0d	03-Feb-14*	14-Mar-14																																	
A1870	Prepare Seismicity Monitoring Report No. 1, Final	5.0d	31-Mar-14*	04-Apr-14																																	
A1880	Prepare Seismicity Report Monitoring No. 2, Draft	39.0d	03-Feb-15*	13-Mar-15																																	
A1890	Prepare Seismicity Monitoring Report No. 2, Final	5.0d	30-Mar-15*	03-Apr-15																																	
A1900	Prepare Feasibility Interim Geotech Design Memorandum, Draft	75.0d	08-Sep-14*	21-Nov-14																																	
A1910	Prepare Feasibility Interim Geotech Design Memorandum, Final	9.0d	08-Dec-14*	16-Dec-14																																	
A1920	Prepare Feasibility Geotech Design Memorandum, Draft	88.0d	09-Sep-15*	05-Dec-15																																	
A1930	Prepare Feasibility Geotech Design Memorandum, Final	11.0d	21-Dec-15*	31-Dec-15																																	
A1940	Prepare Geology & Soils Updated Study Plan Draft	15.0d	01-Aug-15*	15-Aug-15																																	
A1950	Geology & Soils Updated Study Plan Final	3.0d	16-Aug-15*	18-Aug-15																																	
A1960	Prepare Seismic Hazard Updated Study Plan Draft	15.0d	10-Dec-14*	24-Dec-14																																	
A1970	Seismic Hazard Updated Study Plan Final	3.0d	19-Jan-15*	21-Jan-15																																	