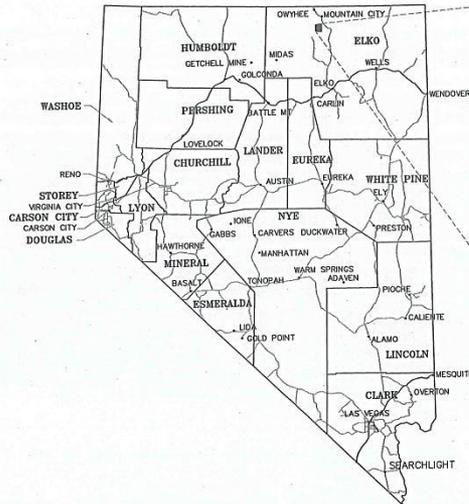


Wood Gulch Mine
Long-Term Closure

Humboldt-Toiyabe National Forest

Located 80 miles north of Elko, Nevada



WOOD GULCH MINE
FACILITY LOCATION MAP
NTS

INDEX OF DRAWINGS			
TITLE	FILE NAME	REV	
INDEX, COMMON LEGEND AND LOCATION MAP	101.00156.03.010	B	
OVERALL SITE PLAN	101.00156.03.100	B	
HEAP LEACH LINER EXCAVATION LOCATIONS	101.00156.03.200	B	
HEAP LEACH REGRADING PLAN AND PROFILE	101.00156.03.300	B	
NORTH STORMWATER CHANNEL PLAN AND PROFILE	101.00156.03.400	B	
SOUTH STORMWATER CHANNEL PLAN AND PROFILE	101.00156.03.500	B	
PROPOSED LINER LAYOUT	101.00156.03.600	B	
SECTIONS AND DETAILS	101.00156.03.800	B	

LEGEND		ABBREVIATIONS	
	EXISTING GROUND SURFACE OR BOTTOM OF EXCAVATION	CS	CARBON STEEL
	SLOPE	CL	CENTER LINE
	3 HORIZONTAL TO 1 VERTICAL SLOPE	CMP	CORRUGATED METAL PIPE
	SECTION OR DETAIL IDENTIFICATION (LETTER/NUMBER)	CPT	CORRUGATED POLYETHYLENE TUBING
	DRAWING REFERENCE NUMBER	DIA	DIAMETER
	50' DIMENSION IN FEET	EL	ELEVATION
		HDPE	HIGH DENSITY POLYETHYLENE
		ID	INSIDE DIAMETER
		LCRS	LEACHATE COLLECTION AND RECOVERY SYSTEM
		MH	MANHOLE
		TIF	TAILING IMPOUNDMENT FACILITY
		NOM	NOMINAL
		NTS	NOT TO SCALE
		OD	OUTSIDE DIAMETER
		PCMS	PROCESS COMPONENT MONITORING SYSTEM
		PVC	POLYVINYL CHLORIDE
		REQ'D	REQUIRED
		SCH	SCHEDULE
		SDR	STANDARD DIMENSION RATIO
		TYP	TYPICAL
		"TYPE S"	SMOOTH INTERIOR SOLID PIPE
		"TYPE SP"	SMOOTH INTERIOR PERFORATED PIPE



REV	DATE	DESCRIPTION	APP'D	DATE
B	6/22/09	ISSUED FOR REGULATORY APPROVAL	LMU	
A	6/26/09	ISSUED FOR CLIENT REVIEW	LMU	

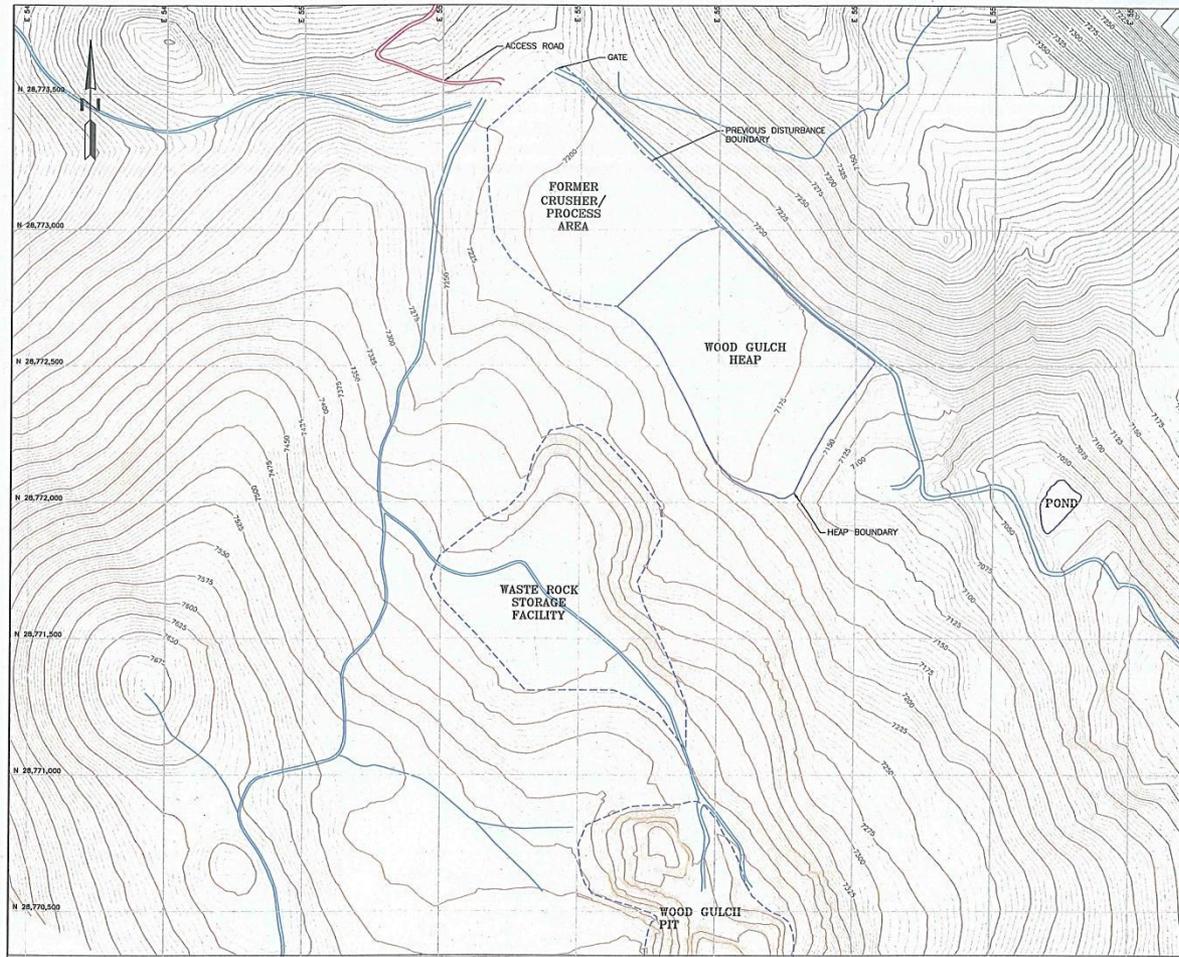
CLIENT	HOMESTEAKE MINING COMPANY			
PROJECT	WOOD GULCH MINE HEAP LEACH COVER REVISION			
TITLE	INDEX, COMMON LEGEND AND LOCATION MAP			
Knight Piésold CONSULTING				
DESIGNED BY	GRN	LOCATION	PROJECT NUMBER	DRAWING NUMBER
		101	00156.03	010
ACTIVITY CODE	N/A	XREF NUMBER	N/A	REVISION
				B

Processing area in 1989



Same processing area in 2009





LEGEND:
 --- EXISTING GROUND SURFACE CONTOUR AND EL., FEET
 --- ACCESS ROAD
 --- UNPAVED ROADS



CLIENT	HOMESTEAK MINING COMPANY
PROJECT	WOOD GULCH MINE HEAP LEACH COVER REVISION
TITLE	OVERALL SITE PLAN

		DESIGNED BY	LJM	LOCATION	PROJECT NUMBER	DRAWING NUMBER	REVISION
		DRAWN BY	LJM	101	00156.03	100	B
ACTIVITY CODE	N/A	SHEET NUMBER	N/A				

B	6/02/09	ISSUED FOR REGULATORY APPROVAL	LJM
A	05/8/09	ISSUED FOR CLIENT REVIEW	LJM
REV	DATE	DESCRIPTION	APP'D CADD

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REFERENCE:
 ---TOPOGRAPHIC MAPPING PROVIDED BY OLYMPIUS AERIAL SURVEY.



Reclaimed heap leach pad in 2009



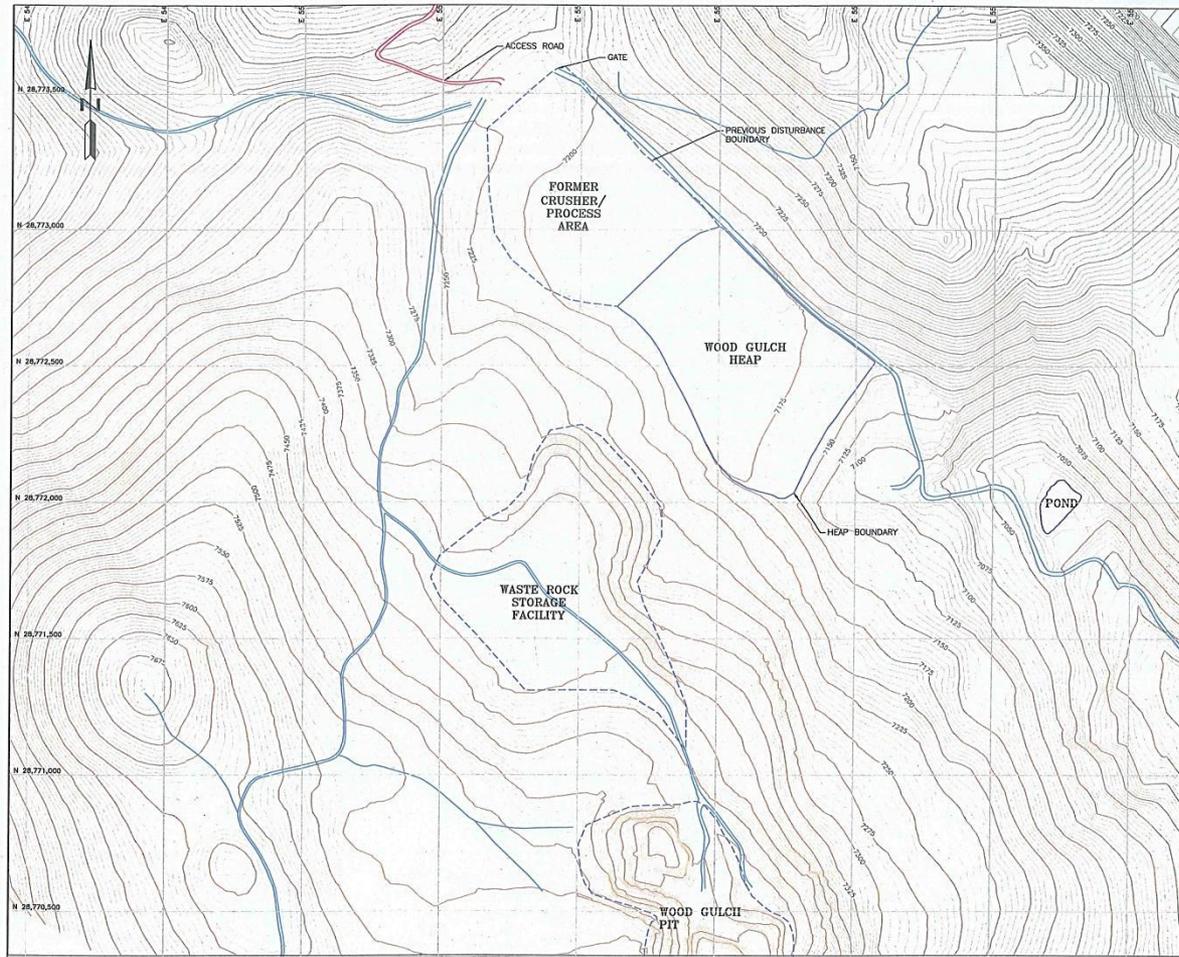






Badger Creek containing redband trout





LEGEND:
 --- EXISTING GROUND SURFACE CONTOUR AND EL., FEET
 --- ACCESS ROAD
 --- UNPAVED ROADS



CLIENT	HOMESTEAK MINING COMPANY
PROJECT	WOOD GULCH MINE HEAP LEACH COVER REVISION
TITLE	OVERALL SITE PLAN

Knight Piesold CONSULTING		DESIGNED BY	LMJ	LOCATION	PROJECT NUMBER	DRAWING NUMBER	REVISION
		DRAWN BY	LMJ	101	00156.03	100	B
		ACTIVITY CODE	N/A	SHEET NUMBER	N/A		

B	6/02/09	ISSUED FOR REGULATORY APPROVAL	LMJ
A	05/8/09	ISSUED FOR CLIENT REVIEW	LMJ
REV	DATE	DESCRIPTION	APP'D CADD
DISCLAIMER			
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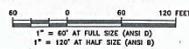


REFERENCE:
 ---TOPOGRAPHIC MAPPING PROVIDED BY OLYMPIUS AERIAL SURVEY.

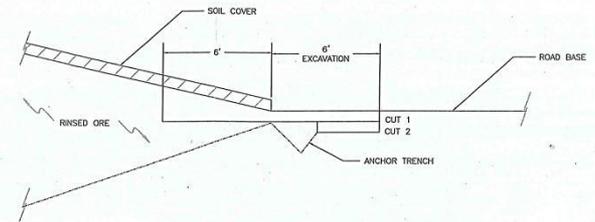
2008 excavation locations to look at the liner edge



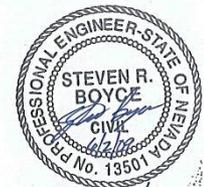
PLAN



- LEGEND:**
- EXISTING GROUND SURFACE CONTOUR AND EL, FEET
 - UNPAVED ROAD
 - EXCAVATION LOCATIONS, 2008



A TYPICAL EXCAVATION CROSS SECTION
NTS



EXP. 12/31/10

CLIENT	HOMESTAKE MINING COMPANY			
PROJECT	WOOD GULCH MINE HEAP LEACH COVER REVISION			
TITLE	HEAP LEACH LINER EDGE EXCAVATION LOCATIONS			
Knight Piésold CONSULTING				
DESIGNED BY	LMJ	LOCATION	PROJECT NUMBER	DRAWING NUMBER
DRAWN BY	LMJ	101	00156.03	110
ACTIVITY CODE	N/A	XREF NUMBER	N/A	REVISION
				B

REV	DATE	DESCRIPTION	APP'D	CADD
B	6/02/09	ISSUED FOR REGULATORY APPROVAL	LMJ	LMJ
A	05/16/09	ISSUED FOR CLIENT REVIEW		

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Exposing the liner on the west side







Photo 1. Exposing existing liner edge and dozer stripping topsoil.

Exposing the liner edge
and removing the growth-
medium in the
background



Photo 2. Hauling spent ore to middle of heap and spreading with dozer.

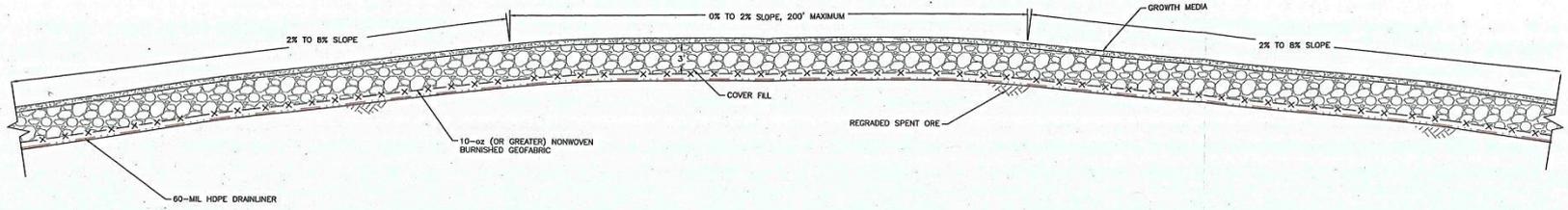
Hauling spent ore to the
middle of the heap
according to the grading
plan



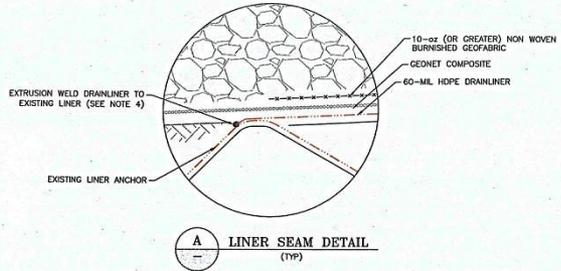
Preparing to extend the liner on the edge



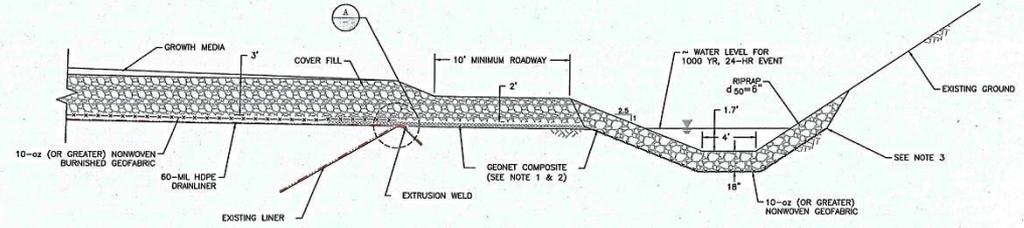
Design drawings of the heap cover



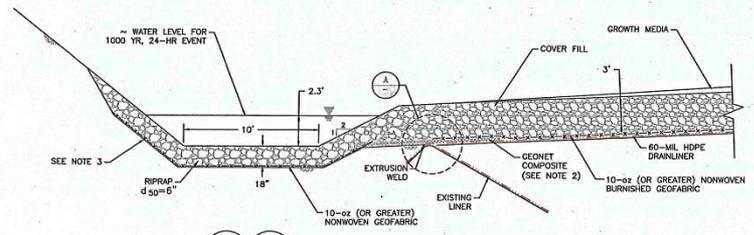
1
200 HEAP COVER LAYOUT (TYP)



A
200 LINER SEAM DETAIL (TYP)

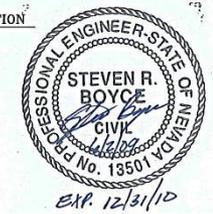


2 2
200 300 NORTH CHANNEL & HEAP SECTION (TYP)



3 3
200 400 SOUTH CHANNEL & HEAP SECTION (TYP)

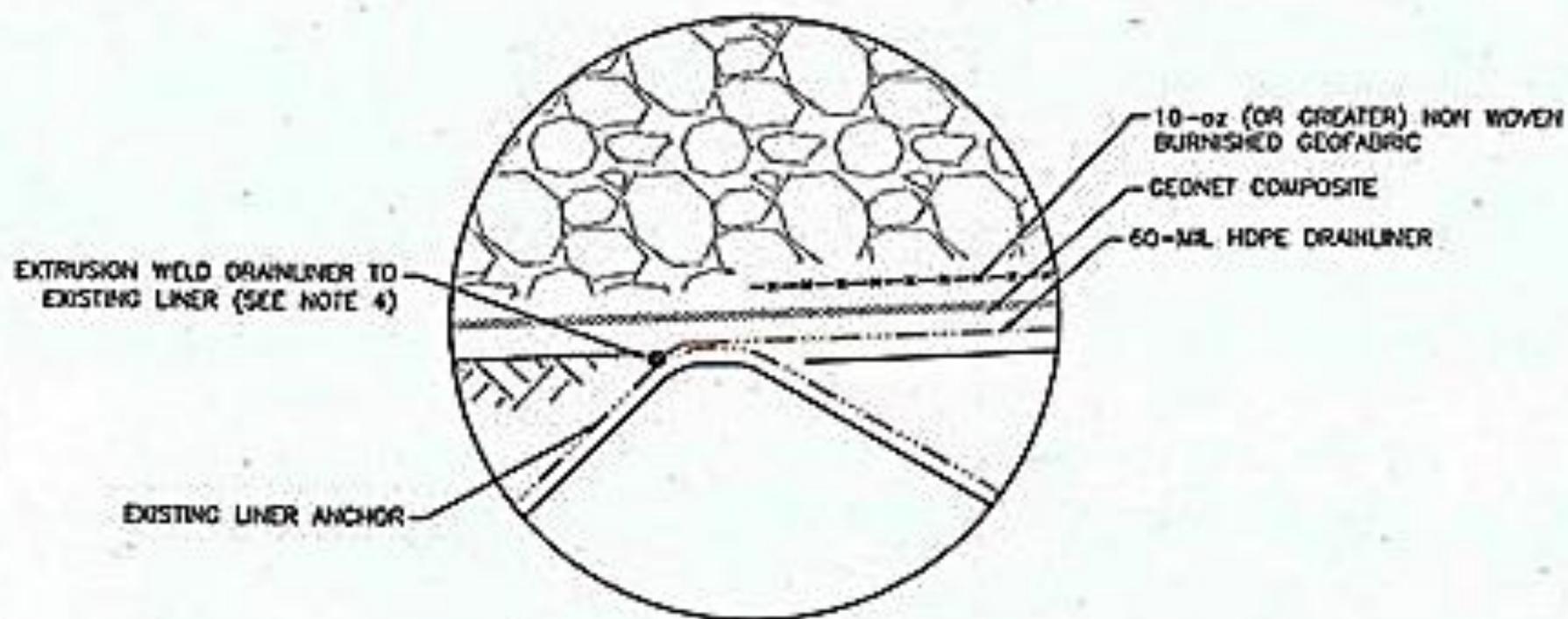
- NOTES:**
1. THE GEONET COMPOSITE SHALL EXTEND IN UP-SLOPE FROM LINER WELD A MINIMUM OF 6 INCHES BUT NOT MORE THAN 18 INCHES.
 2. THE GEONET COMPOSITE SHALL EXTEND DOWN THE CHANNEL SLOPE A MINIMUM OF 12 INCHES.
 3. BEDROCK MAY BE ENCOUNTERED ALONG THE CHANNEL. THE DEPTH AND LOCATION OF RIPRAP WILL BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER.
 4. EXTRUSION WELDS BETWEEN EXISTING LINER AND DRAINLINER SHALL BE LOCATED ALONG ANCHOR TRENCH.



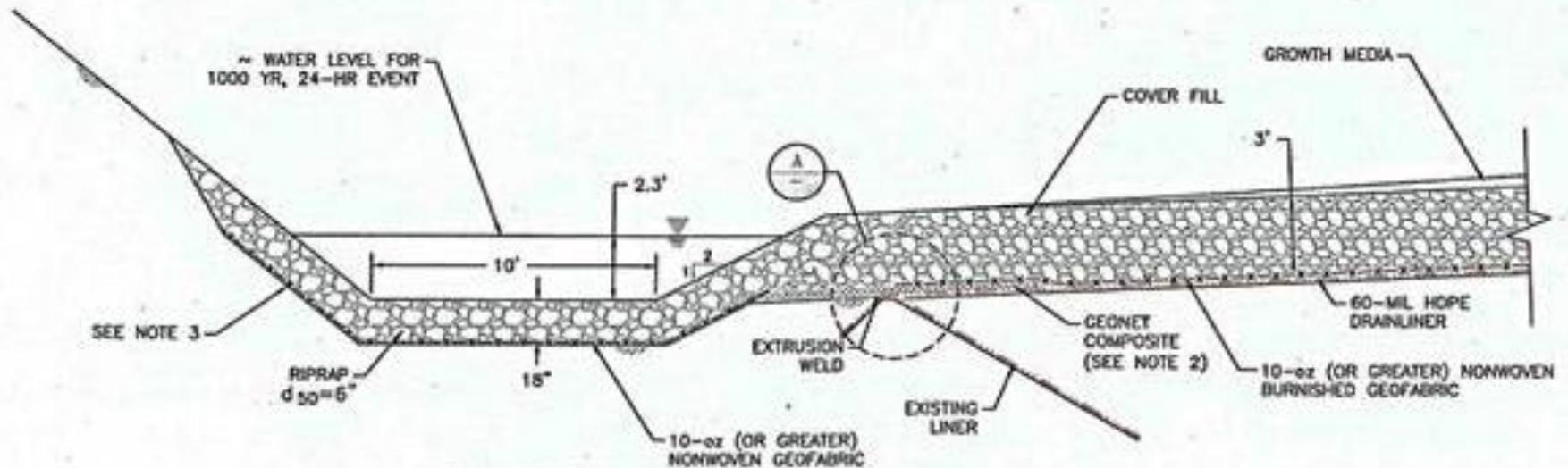
CLIENT	HOMESTAKE MINING COMPANY			
PROJECT	WOOD GULCH MINE HEAP LEACH COVER REVISION			
TITLE	SECTIONS AND DETAILS			
Knights Piesold CONSULTING				
DESIGNED BY	LMJ	LOCATION	PROJECT NUMBER	DRAWING NUMBER
DRAWN BY	LMJ	101	00156.03	600
ACTIVITY CODE	N/A	SHEET NUMBER	N/A	REVISION
				B

B	6/22/09	ISSUED FOR REGULATORY APPROVAL	LMJ
A	05/8/09	ISSUED FOR CLIENT REVIEW	LMJ
REV	DATE	DESCRIPTION	APP'D CADD

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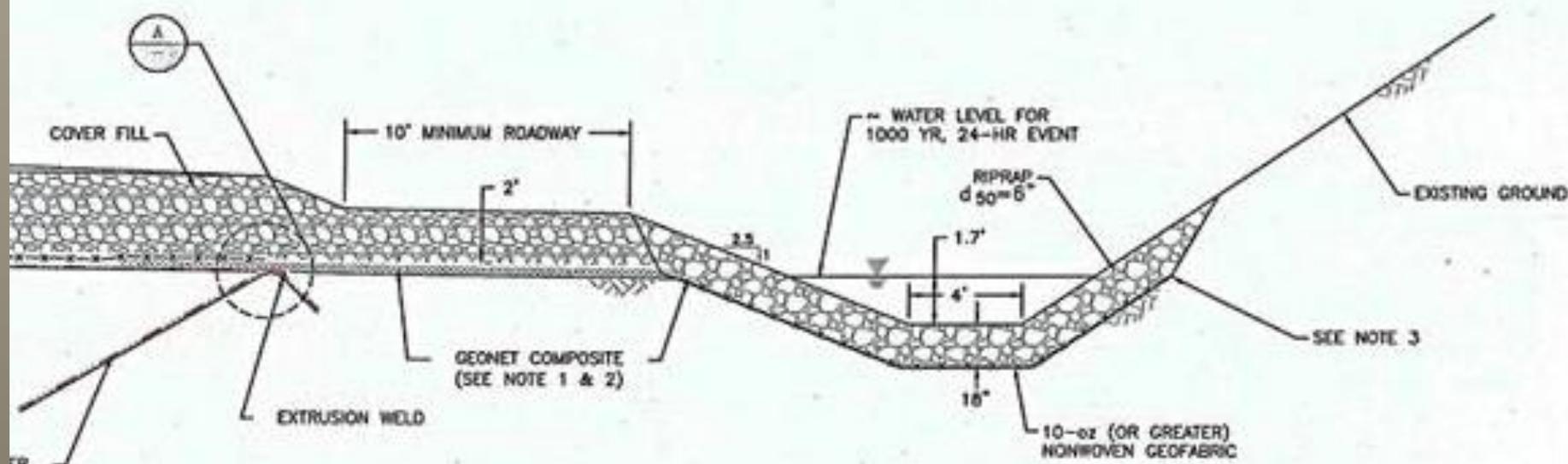


A LINER SEAM DETAIL
(TYP)



3	3	SOUTH CHANNEL & HEAP SECTION
200	400	

 (TYP)



Top soil Removed





Photo 1 – Subgrade Inspection



Photo 2 – Sample Layout (4 sheets alternating thickness)



Photo 3 – Fabric Placed Over Liner Pairs



Photo 4 – Cover Placement

Testing phase of pushing the drainage layer over the liner composite

Offloading and examining the Drainliner



Photo 9 – Offload 36 Inch Section

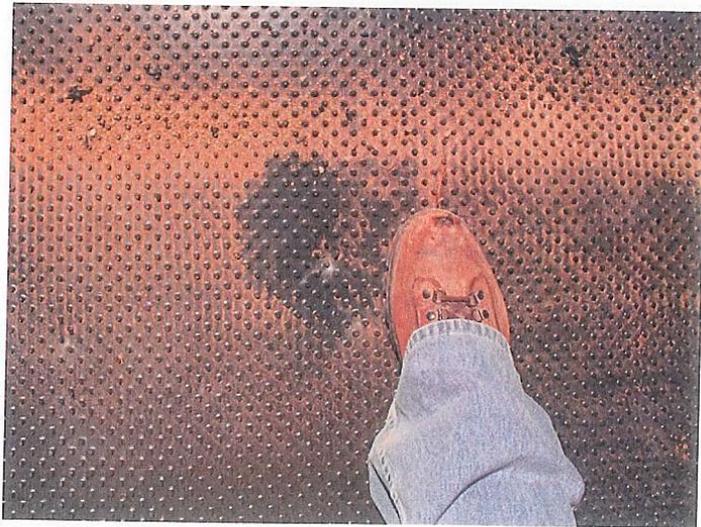
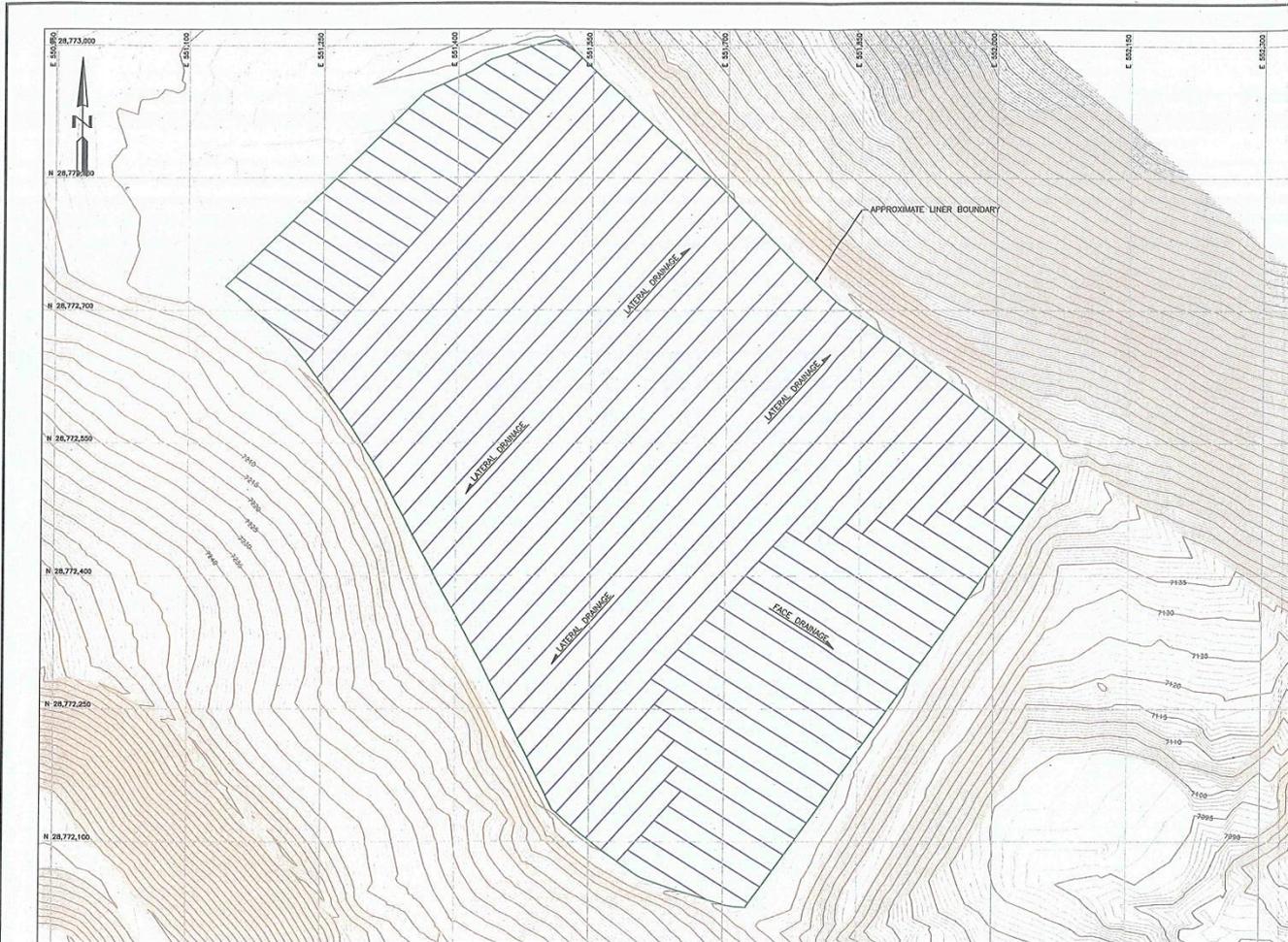


Photo 10 – Indentation

Welding the liner at the edge



Liner layout design

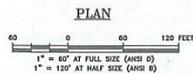


LEGEND:
 EXISTING GROUND SURFACE CONTOUR AND EL. FEET
 60-MIL HDPE DRAINLINER

NOTES:
 1. LINER PANELS AND SEAMS SHALL BE ARRANGED PARALLEL TO LATERAL DRAINAGE (NE-SW ALIGNMENT) WHENEVER POSSIBLE.



REFERENCE:
 -TOPOGRAPHIC MAPPING PROVIDED BY OLYMPUS AERIAL SURVEY.



B	6/02/09	ISSUED FOR REGULATORY APPROVAL	LMJ
A	05/09/09	ISSUED FOR CLIENT REVIEW	LMJ
REV	DATE	DESCRIPTION	APP'D CADD

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CLIENT	HOMESTAKE MINING COMPANY				
PROJECT	WOOD GULCH MINE HEAP LEACH COVER REVISION				
TITLE	PROPOSED LINER LAYOUT				
DESIGNED BY	LMJ	LOCATION	101	PROJECT NUMBER	00156.03
DRAWN BY	LMJ			DRAWING NUMBER	500
ACTIVITY CODE	N/A	XREF NUMBER	N/A	REVISION	B

Knight Piesold
 CONSULTING

Extended
liner

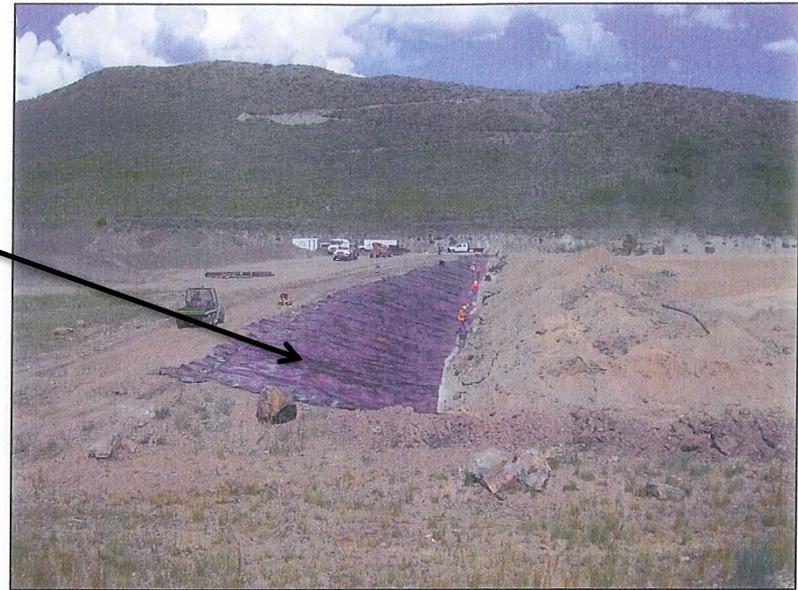


Photo 3. Extending smooth HDPE liner from existing edge to natural grade along north side of heap.

North side receives the
first pass of 60-mil
HDPE Drainliner

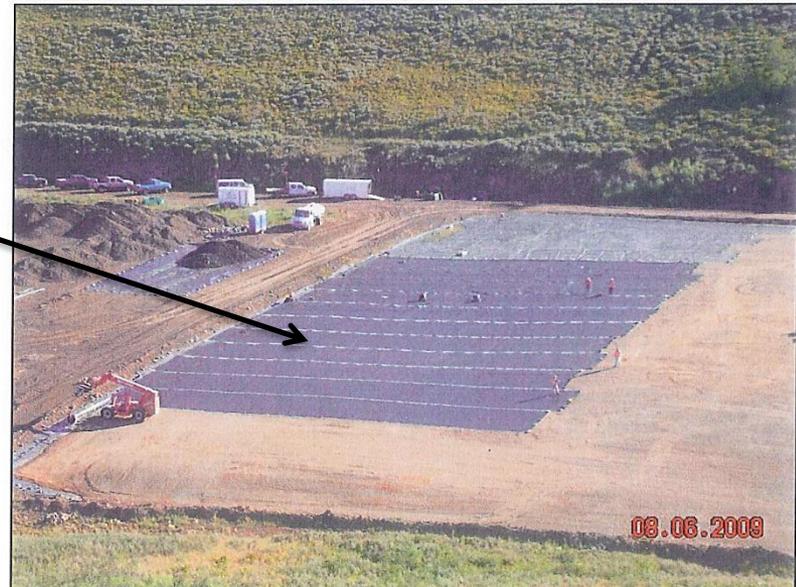


Photo 4. 60-mil HDPE Drainliner™ deployment along north side.

Welded liner

**New cover liner welded to old
liner**



Welded seams



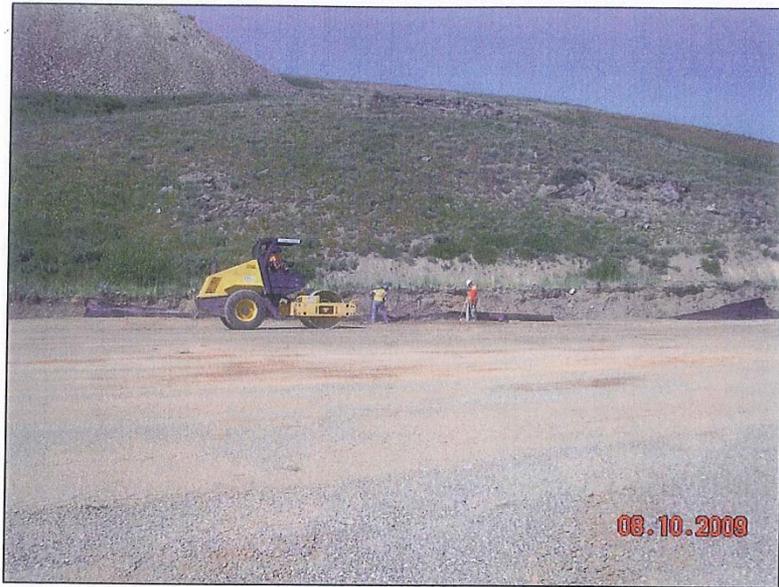


Photo 5. Smooth drum rolling regraded surface prior to HDPE liner deployment.

Preparing the surface
with a drum roller prior
to liner deployment



Photo 6. HDPE liner, geofabric and cover fill placement on regraded heap, looking east.

Advancing liner, geofabric
and drain cover rock



Photo 7. Geocomposite and geofabric placed along road and east drainage, looking south.

Geocomposite and
geofabric placed along
road and east drainage



Photo 8. Spotters used during cover fill placement.

Spotters used during
cover fill placement





Monitoring ports



Sealed port





Excavation of the drain rock



West side drainage before and after



Photo 9. West drainage prior to geofabric and geocomposite placement, looking south.



Photo 10. West drainage completed, looking north.



Photo 11. Topsoil being spread over the top of the cover fill..

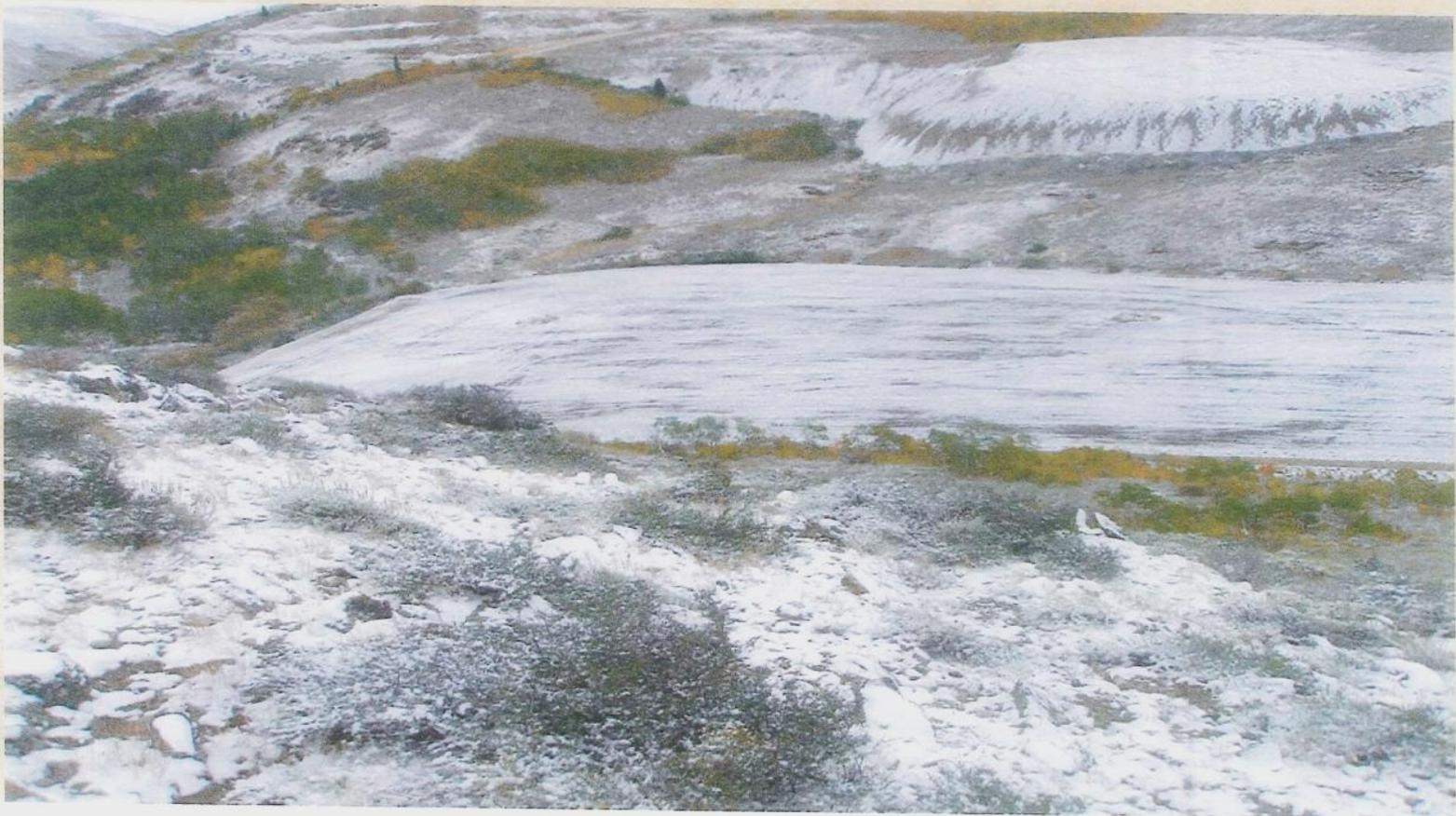
Spreading growth-medium over the drain rock layer



Photo 12. Looking down at new HD-2 flowmeter and LCRS monitoring ports.

Flow meter and monitoring ports

Finished product, just in time. Note the waste dump has been pushed down



2010 inspection of the west drainage





Sparse vegetation in 2010



2010 looking south







Thanks to Homestake Mining Company
of California and Knight Piesold
Consulting