



January 18, 2008

CB Consultants, Inc.  
868 Greystone Place  
San Luis Obispo, CA 93401

**RE: 2007 HDPE Penetration Repair Documentation Report  
Casmalia Hazardous Waste Management Facility  
Casmalia, California  
URS Project No. 28906580**

Dear Mr. Bertelsen,

On behalf of the Casmalia Steering Committee (CSC), URS Corporation (URS) is pleased to submit this Certification Report documenting repair of final cover penetrations in accordance with the work described in the planning documents listed below, herein referred to as "work plan":

- *Casmalia Site Remediation RI/FS Work Plan date June 2004*

## **INTRODUCTION AND BACKGROUND**

URS performed final cover repairs where cone penetration testing (CPT) and piezometer installation damaged the final cover during August 2007. This report documents repairs to the final cover system associated with the execution of the scope of work described in the above mentioned work plan. A total of eight repairs were completed. Four repairs were for successful piezometer installations and four were at areas where piezometer installations were ultimately decided to be properly abandoned in accordance with the work plan. Table 1 relates CPT and piezometer numbers to the repair number. Repair locations are illustrated on Figure 1.

## **EXCAVATION**

Excavations to expose the high-density-polyethylene (HDPE) geomembrane repair areas were performed using a CAT 304.5 mini-excavator and CAT 938 loader. Safety documents required for the excavation work (i.e., the Excavation/Trenching Authorization, the Daily Excavation/Trench Inspection Reports, and hydraulic shoring selection parameter tables) are presented in Appendix A. Daily field reports and air monitoring reports are presented in Appendix B.

Mr. Corey Bertelsen  
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A minimum of 12 inches of clearance was provided between the outer edge of the damage and the limit of exposed geomembrane. Grout materials above the geomembrane associated with the piezometer installations were carefully chipped away to prevent damage to the geomembrane.

## **HDPE GEOMEMBRANE REPAIRS**

HDPE geomembrane and extrudate materials were provided and installed by Field Lining Systems, Inc. (FLSI). GSE Lining Technology manufactured the original geomembrane materials including the prefabricated pipe boots used around the piezometer casings. HDPE geomembrane patch repairs had a minimum of 8 inches of overlap beyond damaged geomembrane areas.

Field seaming and repairs were performed in accordance with the procedures and protocols described in the work plan and Standard Operating Procedure 5-5 (Rev. 1.0, June 3, 2004). Construction Quality Assurance (CQA) documentation is presented in Appendix C. Photographs of representative repairs are presented in Appendix D.

## **BIOTIC BARRIER REPAIR**

All of the repairs were located in the roadway areas where the biotic barrier is not present; therefore, repair of the biotic geonet was not required.

## **GEOCOMPOSITE DRAINAGE LAYER**

The geocomposite drainage layer directly overlying the geomembrane was repaired by overlapping the existing material to new 12oz/sq yd geotextile at a minimum of 6 inches prior to backfilling.

## **BACKFILL**

Backfill of the repair areas was performed in general accordance with the work plan. Soil and aggregate base removed from the individual excavations were segregated as necessary, reused for backfill, and compacted with a hand-operated plate vibrator.

## **REVEGETATION**

All areas disturbed by repair activities were on the bench roads where vegetation was not present; therefore, revegetation was not required for the repair activities.

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## ENGINEERING CERTIFICATION

This report was prepared by URS for CB Consultants under my supervision and is accurate to the best of my knowledge.

Based on URS' observations and the results of testing as described in this report, it is the opinion of URS that the repair of the final cover at the Pesticide/Solvents Landfill conducted in August 2007 has been performed in accordance with the intent of the approved work plan.

If you have any questions, please contact Tony Colera at (805) 937-5747.

Sincerely,  
**URS Corporation**



Tony Colera, EIT  
Senior Environmental Engineer



Jon Everett, P.E.  
Principal Engineer



### Attachments:

- Tables – Piezometer Survey Data
- Figures – Final Cover Locations
- Appendix A – Excavation Authorization/Inspections & Hydraulic Shoring Tables
- Appendix B – Daily Field Reports/Air Monitoring Reports
- Appendix C – Geosynthetic Repair Notes
- Appendix D – Photographic Records

**TABLES**

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**Table 1 Piezometer Survey Data**

Point Description	Well Casing Northing	Well Casing Easting	Casing Elevation	Ground Elevation
<b>RI/FS Piezometers</b>				
RIPZ-13	506070.0822	1237172.808	595.48	959.75
RIPZ-27	505937.398	1237282.997	559.13	559.51
RIPZ-38	505937.629	1237233.764	562.64	562.94
RIPZ-39	506208.556	1237085.584	634.94	635.11

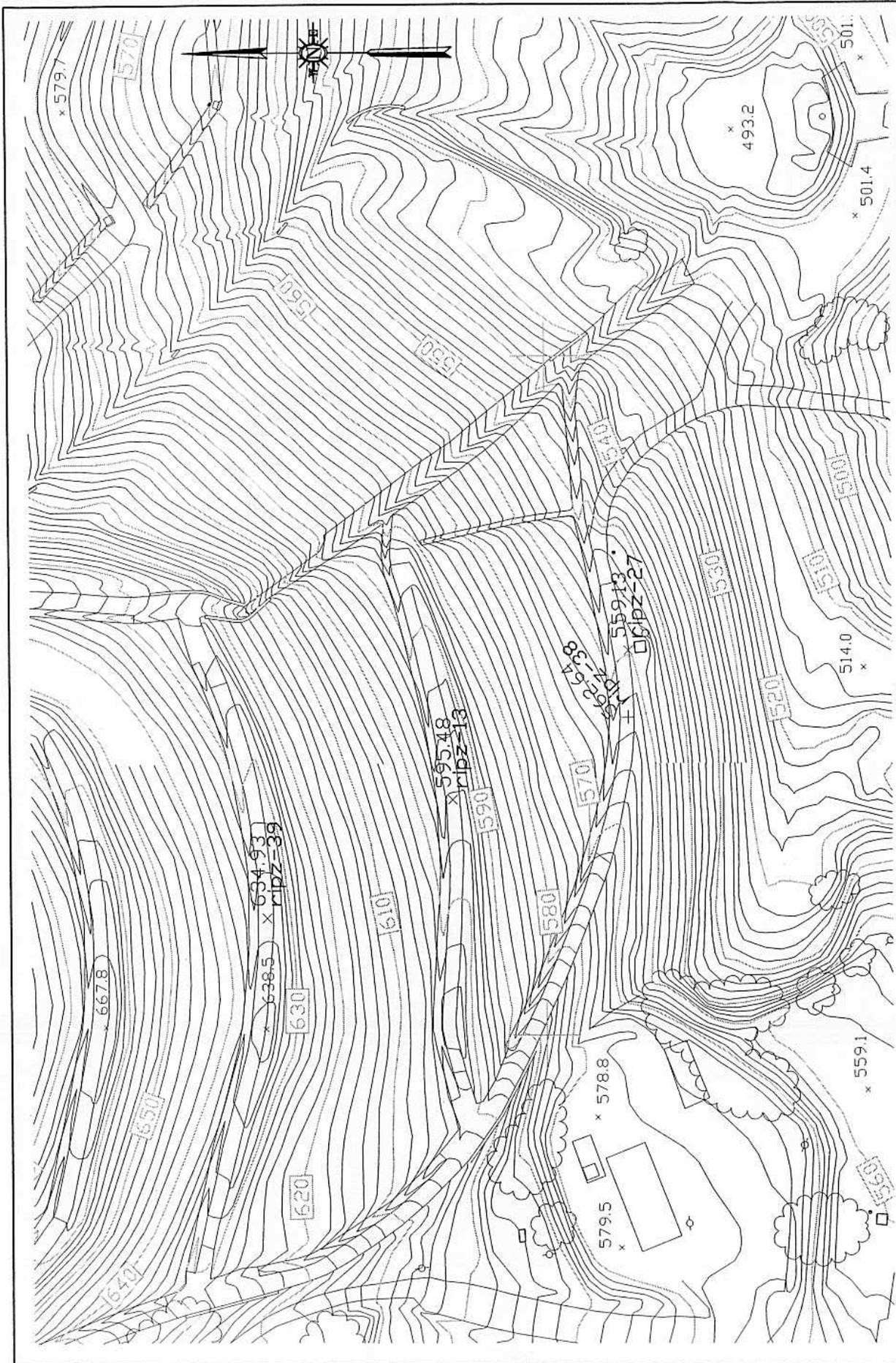
**Notes:**

All piezometers were surveyed on August 29, 2007.

Ground surface elevation calculated using tape measure.

## FIGURES

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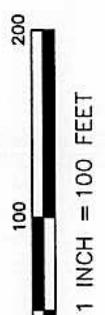


**Cannon ASSOCIATES**  
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 www.CannonAssociates.us

THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND ARE THE PROPERTY OF CANNON ASSOCIATES. ALL DESIGNS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE CALIFORNIA BUILDING CODES AND ALL APPLICABLE REGULATIONS. THESE DRAWINGS OR REPRODUCED WITHOUT THE EXPRESSED WRITTEN PERMISSION OF CANNON ASSOCIATES.

**NEW RI PIEZOMETER LOCATIONS  
 CASMALIA LANDFILL  
 COUNTY OF SANTA BARBARA, CALIFORNIA**

DRAWN BY KEH CHECKED BY LEC SCALE 1" = 100' DATE 12/14/07



**APPENDIX A**

**EXCAVATION AUTHORIZATION/EXCAVATION INSPECTIONS  
& HYRAULIC SHORING TABLES**

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**Health, Safety and Environment**  
**EXCAVATION / TRENCHING**  
**AUTHORIZATION**

Attachment 13-3

**POST AT LOCATION**  
**(GOOD FOR ONE WEEK ONLY)**

Authorization No.	Authorization From
Competent Person: Larry Bailey Sr.	TO:
Project Name: Casmalia O&M	Project Location: Casmalia Landfill
<b>Description or Job Special Procedures:</b> Excavation will be conducted to expose a minimum of 18 inches on each side of the repair areas. Excavations will be planned in advance to allow access for movement of soil to be stockpiled west of LP cell. Excavations greater than 4 feet deep shall be shored. Shoring will be approved by a PE. Ladders will be positioned at entrance to excavations. Each excavation area shall be barricaded with delineators or other warning barricades. Air monitoring will be conducted during excavation and entry of excavations. Verify that grout seals at each repair area are competent prior to repairing landfill liner. Following repair, liner will be vacuum tested. Following test verification, excavation areas will be backfilled and compacted with the same soil removed as defined in the workplan. Following all work during each day, an inspection report will be conducted. All work will be conducted in accordance to OSHA requirements and URS Safety Management Standards.	

**Check Yes, No, or N/A  
for Not Applicable**

**EMPLOYEE TRAINING AND PRE-EXCAVATION BRIEFING**

1. Safe Excavation and Rescue Training Conducted on:	Date: 11-05-2007			
2. Mandatory pre-excavation briefing conducted on:	Date: 11-05-2007			
		<b>Yes</b>	<b>No</b>	<b>N/A</b>
3. Does this job require special training?			X	

**ELECTRICAL SAFETY**

	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1. Are all electrical devices grounded, double insulated, or GFCI protected?			X
2. Have all power cords and tools been visually inspected?			X

**SURFACE ENCUMBRANCES**

1. Have all surface encumbrances that are located so as to create a hazard to employees been removed or supported, as necessary, to safeguard employees?	X		
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**UNDERGROUND INSTALLATIONS**

1. Have the estimated locations of all underground installation been determined prior to excavation?			X
2. Have utility companies been contacted and advised of proposed work?			X
3. Are underground installations protected, supported or removed while excavations are open?			X

**PROTECTIVE SYSTEMS**

1. Excavation slopes comply with Type C Soil Classification?	X		
2. If no to question 1, has soil been examined and been determined to be other than Type			



**Health, Safety and Environment**  
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	Yes	No	N/A
C soil by a Competent Person?			
3. If protective measures beyond sloping are required, do they meet OSHA Appendix standards?	X		
4. If no to question 3, has the protective system been designed and stamped by a Registered Professional Engineer?			

**MEANS OF EGRESS FOR TRENCHES DEEPER THAN 4 FEET**

1. Are stairways, ladders, or ramps provided every 25 feet?	X		
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**ACCESS AND EGRESS**

1. Are structural ramps that are used solely by personnel as a means of access or egress from excavations designed by a competent person?	X		
2. Are ramps and runways constructed so structural members are connected to prevent displacement?	X		
3. Are structural ramps that are used for access and egress of equipment designed by a competent person qualified in structural design and constructed in accordance with the design?	X		
4. Are structural members used for ramps and runways of uniform thickness?	X		
5. Are cleats used in connecting runway structural members attached in a manner to prevent tripping?	X		
6. Are structural ramps used in lieu of steps provided with cleats or other surface treatment to prevent slipping?			X

**EXPOSURE TO VEHICULAR TRAFFIC**

1. Are personnel exposed to public vehicular traffic wearing reflectorized or high visibility vests?	X		
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**EXPOSURE TO FALLING LOADS**

1. Are employees prohibited from standing underneath loads handled by lifting or digging equipment?	X		
2. Are employees prohibited from standing next to vehicles being loaded or unloaded?	X		

**WARNING SYSTEMS FOR MOBILE EQUIPMENT**

1. Are warning systems such as barricades, hand or mechanical signals, or stop logs utilized when mobile equipment is operated adjacent to or at the edge of an excavation?	X		
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**TESTING FOR HAZARDOUS ATMOSPHERES**

1. Are the atmospheric hazards that can be reasonably expected to exist in excavations greater than 4 feet deep tested and controlled? <span style="float: right;">Yes - see site Air Monitoring Logs</span>			
	READING:	TIME:	INITIAL:
2. Test of Oxygen Content:	_____ % O <sub>2</sub> (19.5% Minimum)	_____	_____
3. Test for Flammable Concentrations:	_____ % LEL (10% Maximum)	_____	_____



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**EXCAVATION / TRENCHING**  
**AUTHORIZATION**

Attachment 13-3

	Yes	No	N/A
4. Test for Toxic Concentration: _____ %PPM of _____			

5. Is testing conducted as often as necessary to ensure safety personnel?	X		
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**EMERGENCY RESCUE EQUIPMENT**

1. Is emergency rescue equipment such as SCBA, safety harness and line, or basket stretcher readily available and attended when hazardous atmospheric conditions exist?	X		
2. Are employees who enter bell-bottom pier holes or other similar deep and confining excavations wearing a body harness with a life-line?			X

**PROTECTION FROM HAZARDS ASSOCIATED WITH WATER ACCUMULATION**

1. Are employees prohibited from entering excavations that have accumulated water?			X
2. Is water being controlled or prevented from accumulating in excavation by the use of water removal equipment?	X		
3. Is water control equipment operation being monitored by a competent person?			X
4. Are diversion ditches, dikes, or other suitable means used to prevent surface water from entering excavation?		X	
5. Are excavations subjected to run-off from heavy rain immediately re-inspected by a competent person?	X		

**PROTECTION OF EMPLOYEES FROM LOOSE ROCK OR SOIL**

1. Is adequate protection provided to protect employees from loose rock or soil that could pose a hazard by falling or rolling from an excavation face?	X		
2. Are employees protected from excavated or other material and equipment by placing this material a minimum of two (2) feet from the edge of excavations or by the use of retraining devices?	X		

**STABILITY OF ADJACENT STRUCTURES**

1. Are support systems such as shoring, bracing, or underpinning provided to ensure stability of adjoining structures (i.e., buildings, walls) endangered by excavation activities?	X		
2. Has any excavation below the level of the base or footing of foundations or retaining walls been:			
Provided with a support system such as under pinning to ensure the safety of employees and stability of the structure?	X		
Performed in stable rock?	X		
Determined by a registered professional engineer that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation activity?	X		
Determined by a registered professional that the excavation work will not pose a hazard to employees?	X		
3. Is the undermining of sidewalks and pavement structures prohibited?	X		

**INSPECTIONS**

1. Are daily inspections of excavations where employee exposure can be reasonably anticipated being done by the competent person?	X		
2. Are inspections being performed by a competent person after every rainstorm or other hazard increasing occurrence?	X		



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	Yes	No	N/A
3. Are employees removed from the excavation if the competent person finds evidence at any time of a situation that could result in a possible cave-in, protective system failure, hazardous atmosphere or other hazardous condition?	X		

**FALL PROTECTION**

1. Are standard guardrails provided on walkways and bridges that cross over excavations?			X
2. Are all remotely located excavations adequately barricaded or covered?	X		
3. Are temporary wells, pits, shafts and similar exploratory operations backfilled upon completion?			X

I have inspected the excavation described in this authorization:

**Tony Colera**

Digitally signed by Tony Colera  
DN: cn=Tony Colera, o=URS Corporation,  
ou=Casmalia Operations,  
email=anthony\_colera@urscorp.com, c=US  
Date: 2007.11.07 10:20:32 -08'00'

11-07-2007

\_\_\_\_\_  
Signature of Competent Person

\_\_\_\_\_  
Date



**Health and Safety Program**  
**DAILY EXCAVATION / TRENCH**  
**INSPECTION REPORT**

Attachment 13-4

Revision 2: March 2005

Competent Person:	LAWRENCE BAILEY	Date:	11-05-07
Project Name:	CASUALIA OFM	Weather Conditions:	OVERCAST, COOL
Projection Location:	CASUALIA LANDFILL	Rainfall Amounts 24 Hours Previous:	0.00

"I hereby attest that the following conditions existed and that the following items were checked or reviewed during this inspection".

Check Yes, No or N/A for Not Applicable. If comment is required, circle the number and see Page 2.

		Yes	No	N/A
1.	Are barricades or covers in place and in good condition?	✓		
2.	Have tension cracks been observed along the top on any slopes?		✓	
3.	Is excavated material at least 2' from the edge of the excavation?	✓		
4.	Are slopes cut at design angle of repose?			✓
5.	Is any water seepage noted in trench walls or bottom?		✓	
6.	Are pumps in place or available if needed?		✓	
7.	Is bracing system installed in accordance with design?			✓
8.	Is there evidence of significant fracture planes in soil or rock?		✓	
9.	Is there any evidence of caving or sloughing of soil since the last inspection?		✓	
10.	Are there any zones of unusually weak soils or materials not anticipated?		✓	
11.	Are there any noted dramatic dips or bedrock?		✓	
12.	Are all short-term trench(s) covered within 24 hours?			✓
13.	Have non-compliance items been photographed?			✓
14.	Are hydraulic shores pumped to design pressure?			✓
15.	Is shoring being used secure?			✓
16.	Does plan include adequate safety factor for equipment being used?	✓		
17.	Is traffic adequately away from trenching operation?	✓		
18.	Are barricades up and secure?	✓		
19.	Are there trees, boulders or other hazards in area?		✓	
20.	Is vibration from equipment or traffic to close to trenching operation?		✓	
21.	Are trench box(s) certified?			✓
22.	Are GFCIs used on ALL temporary electrical cords?			✓
23.	Is access and egress located within 25 feet of entrants?	✓		
24.	Is hazardous testing done on a regular basis?	✓		
25.	Has rescue procedure been established and is equipment immediately available?	✓		



**Health and Safety Program**  
**DAILY EXCAVATION / TRENCH**  
**INSPECTION REPORT**

Attachment 13-4  
Revision 2: March 2005

Competent Person:	LAWRENCE BAILEY	Date:	11-06-07
Project Name:	CASUALIA O & M	Weather Conditions:	OVERCAST, COOL
Projection Location:	CASUALIA LANDFILL	Rainfall Amounts 24 Hours Previous:	0.02"

"I hereby attest that the following conditions existed and that the following items were checked or reviewed during this inspection".

Check Yes, No or N/A for Not Applicable. If comment is required, circle the number and see Page 2.

		Yes	No	N/A
1.	Are barricades or covers in place and in good condition?	✓		
2.	Have tension cracks been observed along the top on any slopes?		✓	
3.	Is excavated material at least 2' from the edge of the excavation?	✓		
4.	Are slopes cut at design angle of repose?			✓
5.	Is any water seepage noted in trench walls or bottom?		✓	
6.	Are pumps in place or available if needed?		✓	
7.	Is bracing system installed in accordance with design?			✓
8.	Is there evidence of significant fracture planes in soil or rock?		✓	
9.	Is there any evidence of caving or sloughing of soil since the last inspection?		✓	
10.	Are there any zones of unusually weak soils or materials not anticipated?		✓	
11.	Are there any noted dramatic dips or bedrock?		✓	
12.	Are all short-term trench(s) covered within 24 hours?			✓
13.	Have non-compliance items been photographed?			✓
14.	Are hydraulic shores pumped to design pressure?			✓
15.	Is shoring being used secure?			✓
16.	Does plan include adequate safety factor for equipment being used?	✓		
17.	Is traffic adequately away from trenching operation?	✓		
18.	Are barricades up and secure?	✓		
19.	Are there trees, boulders or other hazards in area?		✓	
20.	Is vibration from equipment or traffic to close to trenching operation?		✓	
21.	Are trench box(s) certified?			✓
22.	Are GFCIs used on ALL temporary electrical cords?			✓
23.	Is access and egress located within 25 feet of entrants?	✓		
24.	Is hazardous testing done on a regular basis?	✓		
25.	Has rescue procedure been established and is equipment immediately available?	✓		



**Health and Safety Program**  
**DAILY EXCAVATION / TRENCH**  
**INSPECTION REPORT**

Attachment 13-4

Revision 2: March 2005

Competent Person:	LAWRENCE BAILEY	Date:	11-02-07
Project Name:	CASHMIRA O & M	Weather Conditions:	OVERCAST, COOL
Projection Location:	CASHMIRA LAND	Rainfall Amounts 24 Hours Previous:	0.00"

"I hereby attest that the following conditions existed and that the following items were checked or reviewed during this inspection".

Check Yes, No or N/A for Not Applicable. If comment is required, circle the number and see Page 2.

		Yes	No	N/A
1.	Are barricades or covers in place and in good condition?	✓		
2.	Have tension cracks been observed along the top on any slopes?		✓	
3.	Is excavated material at least 2' from the edge of the excavation?	✓		
4.	Are slopes cut at design angle of repose?			✓
5.	Is any water seepage noted in trench walls or bottom?		✓	
6.	Are pumps in place or available if needed?		✓	
7.	Is bracing system installed in accordance with design?			✓
8.	Is there evidence of significant fracture planes in soil or rock?		✓	
9.	Is there any evidence of caving or sloughing of soil since the last inspection?		✓	
10.	Are there any zones of unusually weak soils or materials not anticipated?		✓	
11.	Are there any noted dramatic dips or bedrock?		✓	
12.	Are all short-term trench(s) covered within 24 hours?			✓
13.	Have non-compliance items been photographed?			✓
14.	Are hydraulic shores pumped to design pressure?			✓
15.	Is shoring being used secure?			✓
16.	Does plan include adequate safety factor for equipment being used?	✓		
17.	Is traffic adequately away from trenching operation?	✓		
18.	Are barricades up and secure?	✓		
19.	Are there trees, boulders or other hazards in area?		✓	
20.	Is vibration from equipment or traffic to close to trenching operation?		✓	
21.	Are trench box(s) certified?			✓
22.	Are GFCIs used on ALL temporary electrical cords?			✓
23.	Is access and egress located within 25 feet of entrants?	✓		
24.	Is hazardous testing done on a regular basis?	✓		
25.	Has rescue procedure been established and is equipment immediately available?	✓		



**Health and Safety Program**  
**DAILY EXCAVATION / TRENCH**  
**INSPECTION REPORT**

Attachment 13-4  
Revision 2: March 2005

Competent Person:	LAWRENCE BAILEY	Date:	11-08-07
Project Name:	CASMAIA O & M	Weather Conditions:	CLOUDY COOL
Project Location:	CASMAIA LANDFILL	Rainfall Amounts 24 Hours Previous:	0.00"

"I hereby attest that the following conditions existed and that the following items were checked or reviewed during this inspection".

Check Yes, No or N/A for Not Applicable. If comment is required, circle the number and see Page 2.

		Yes	No	N/A
1.	Are barricades or covers in place and in good condition?	✓		
2.	Have tension cracks been observed along the top on any slopes?		✓	
3.	Is excavated material at least 2' from the edge of the excavation?	✓		
4.	Are slopes cut at design angle of repose?			✓
5.	Is any water seepage noted in trench walls or bottom?		✓	
6.	Are pumps in place or available if needed?		✓	
7.	Is bracing system installed in accordance with design?			✓
8.	Is there evidence of significant fracture planes in soil or rock?		✓	
9.	Is there any evidence of caving or sloughing of soil since the last inspection?		✓	
10.	Are there any zones of unusually weak soils or materials not anticipated?		✓	
11.	Are there any noted dramatic dips or bedrock?		✓	
12.	Are all short-term trench(s) covered within 24 hours?			✓
13.	Have non-compliance items been photographed?			✓
14.	Are hydraulic shores pumped to design pressure?			✓
15.	Is shoring being used secure?			✓
16.	Does plan include adequate safety factor for equipment being used?	✓		
17.	Is traffic adequately away from trenching operation?	✓		
18.	Are barricades up and secure?	✓		
19.	Are there trees, boulders or other hazards in area?		✓	
20.	Is vibration from equipment or traffic to close to trenching operation?		✓	
21.	Are trench box(s) certified?			✓
22.	Are GFCIs used on ALL temporary electrical cords?			✓
23.	Is access and egress located within 25 feet of entrants?	✓		
24.	Is hazardous testing done on a regular basis?	✓		
25.	Has rescue procedure been established and is equipment immediately available?	✓		



**Health and Safety Program**  
**DAILY EXCAVATION / TRENCH**  
**INSPECTION REPORT**

Attachment 13-4

Revision 2: March 2005

Competent Person:	<i>TONY COLERA</i>	Date:	<i>11-12-2007</i>
Project Name:	<i>CASUALIA O&amp;U</i>	Weather Conditions:	<i>CLEAR, SUNNY</i>
Project Location:	<i>CASUALIA LANDFILL</i>	Rainfall Amounts 24 Hours Previous:	<i>0.07 SUN MORNING</i> <i>0.00 THIS MORNING</i>

"I hereby attest that the following conditions existed and that the following items were checked or reviewed during this inspection".

Check Yes, No or N/A for Not Applicable. If comment is required, circle the number and see Page 2.

		Yes	No	N/A
1.	Are barricades or covers in place and in good condition?	<input checked="" type="checkbox"/>		
2.	Have tension cracks been observed along the top on any slopes?		<input checked="" type="checkbox"/>	
3.	Is excavated material at least 2' from the edge of the excavation?	<input checked="" type="checkbox"/>		
4.	Are slopes cut at design angle of repose?			<input checked="" type="checkbox"/>
5.	Is any water seepage noted in trench walls or bottom?		<input checked="" type="checkbox"/>	
6.	Are pumps in place or available if needed?		<input checked="" type="checkbox"/>	
7.	Is bracing system installed in accordance with design?			<input checked="" type="checkbox"/>
8.	Is there evidence of significant fracture planes in soil or rock?		<input checked="" type="checkbox"/>	
9.	Is there any evidence of caving or sloughing of soil since the last inspection?		<input checked="" type="checkbox"/>	
10.	Are there any zones of unusually weak soils or materials not anticipated?		<input checked="" type="checkbox"/>	
11.	Are there any noted dramatic dips or bedrock?		<input checked="" type="checkbox"/>	
12.	Are all short-term trench(s) covered within 24 hours?			<input checked="" type="checkbox"/>
13.	Have non-compliance items been photographed?			<input checked="" type="checkbox"/>
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17.	Is traffic adequately away from trenching operation?	<input checked="" type="checkbox"/>		
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19.	Are there trees, boulders or other hazards in area?		<input checked="" type="checkbox"/>	
20.	Is vibration from equipment or traffic too close to trenching operation?		<input checked="" type="checkbox"/>	
21.	Are trench box(s) certified?			<input checked="" type="checkbox"/>
22.	Are GFCIs used on ALL temporary electrical cords?			<input checked="" type="checkbox"/>
23.	Is access and egress located within 25 feet of entrants?	<input checked="" type="checkbox"/>		
24.	Is hazardous testing done on a regular basis?	<input checked="" type="checkbox"/>		
25.	Has rescue procedure been established and is equipment immediately available?	<input checked="" type="checkbox"/>		



**Health and Safety Program**  
**DAILY EXCAVATION / TRENCH**  
**INSPECTION REPORT**

Attachment 13-4  
 Revision 2: March 2005

Competent Person:	<i>TOM COLEMAN</i>	Date:	<i>11-13-2007</i>
Project Name:	<i>CASUALIA O&amp;M/R1</i>	Weather Conditions:	<i>CLEAR, SUNNY</i>
Projection Location:	<i>CASUALIA LANDFILL</i>	Rainfall Amounts 24 Hours Previous:	<i>0.00-IN</i>

"I hereby attest that the following conditions existed and that the following items were checked or reviewed during this inspection".

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2.	Have tension cracks been observed along the top on any slopes?		<input checked="" type="checkbox"/>	
3.	Is excavated material at least 2' from the edge of the excavation?	<input checked="" type="checkbox"/>		
4.	Are slopes cut at design angle of repose?			<input checked="" type="checkbox"/>
5.	Is any water seepage noted in trench walls or bottom?		<input checked="" type="checkbox"/>	
6.	Are pumps in place or <u>available</u> if needed?	<input checked="" type="checkbox"/>		
7.	Is bracing system installed in accordance with design?	<input checked="" type="checkbox"/>		
8.	Is there evidence of significant fracture planes in soil or rock?		<input checked="" type="checkbox"/>	
9.	Is there any evidence of caving or sloughing of soil since the last inspection?		<input checked="" type="checkbox"/>	
10.	Are there any zones of unusually weak soils or materials not anticipated?		<input checked="" type="checkbox"/>	
11.	Are there any noted dramatic dips or bedrock?		<input checked="" type="checkbox"/>	
12.	Are all short-term trench(s) covered within 24 hours?			<input checked="" type="checkbox"/>
13.	Have non-compliance items been photographed?			<input checked="" type="checkbox"/>
14.	Are hydraulic shores pumped to design pressure?	<input checked="" type="checkbox"/>		
15.	Is shoring being used secure?	<input checked="" type="checkbox"/>		
16.	Does plan include adequate safety factor for equipment being used?	<input checked="" type="checkbox"/>		
17.	Is traffic adequately away from trenching operation?	<input checked="" type="checkbox"/>		
18.	Are barricades up and secure?	<input checked="" type="checkbox"/>		
19.	Are there trees, boulders or other hazards in area?		<input checked="" type="checkbox"/>	
20.	Is vibration from equipment or traffic to close to trenching operation?		<input checked="" type="checkbox"/>	
21.	Are trench box(s) certified? <i>SHORING IS CERTIFIED</i>	<input checked="" type="checkbox"/>		
22.	Are GFCIs used on ALL temporary electrical cords?	<input checked="" type="checkbox"/>		
23.	Is access and egress located within 25 feet of entrants?	<input checked="" type="checkbox"/>		
24.	Is hazardous testing done on a regular basis?	<input checked="" type="checkbox"/>		
25.	Has rescue procedure been established and is equipment immediately available?	<input checked="" type="checkbox"/>		

# HYDRAULIC VERTICAL SHORE DEPTH TABLES

## Hydraulic Shores - Type "A" Soils

Depth of Excavation	Maximum Vertical Spacing of Struts	Maximum Horizontal Spacing of Struts	Excavation Width	Oversleeve Required	Sheeting Required
0 ft - 15 ft	4 ft	8 ft	0 ft - 8 ft*	No	No
			8 ft - 12 ft	No	
			12 ft - 15 ft	Yes	
15 ft - 25 ft	4 ft	8 ft	0 ft - 8 ft*	No	No
			8 ft - 12 ft	Yes	
			12 ft - 15 ft	Yes	

## Hydraulic Shores - Type "B" Soils

Depth of Excavation	Maximum Vertical Spacing of Struts	Maximum Horizontal Spacing of Struts	Excavation Width	Oversleeve Required	Sheeting Required
0 ft - 15 ft	4 ft	8 ft	0 ft - 8 ft*	No	No
			8 ft - 12 ft	No	
			12 ft - 15 ft	Yes	
15 ft - 25 ft	4 ft	6 ft	0 ft - 8 ft*	No	No
			8 ft - 12 ft	Yes	
			12 ft - 15 ft	Yes	

## Hydraulic Shores - Type "C60" Soils

Depth of Excavation	Maximum Vertical Spacing of Struts	Maximum Horizontal Spacing of Struts	Excavation Width	Oversleeve Required	Sheeting Required
0 ft - 15 ft	4 ft	6 ft	0 ft - 8 ft*	No	Yes
			8 ft - 12 ft	No	
			12 ft - 15 ft	Yes	
15 ft - 25 ft	4 ft	4 ft	0 ft - 8 ft*	No	Yes
			8 ft - 12 ft	Yes	
			12 ft - 15 ft	Yes	

\*Indicates maximum width for a Vertical End Shore





PROJECT NAME: <i>CASMALIA RI</i>	PROJECT NO.: <i>28906580</i>	DATE: <i>11-13-2007</i>
RECORDER: <i>T. COLERA</i>	WEATHER:	
URS PERSONNEL: <i>T. COLERA, L. BAILEY, L.B. JR, M. BAILEY, O. CAMACHO, B. SHUMAKER</i>		
SUB CONTRACTORS//VISITORS: <i>UM. RENTALS, FLSI</i>		
PROJECT LOCATION AND GENERAL ACTIVITY: <i>LANDFILL LINER REPAIR AT BENCH 1, BENCH 2 &amp; GALLERY WELL ROAD ON 75 LANDFILL - CASMALIA, CA.</i>		

TIME	DESCRIPTION/NOTES
0710	UNITED RENTALS ON SITE TO DELIVER SHORING MATERIALS.
0725	FLSI ONSITE: JOSE TORRES, R. JAVIERQUI, R. GARCIA, E. TORRES, J. TORRES JR.
0740	CONDUCT SITE ORIENTATION, DISCUSS HEALTH & SAFETY, REVIEW HAZARD EVALUATION. KEY POINTS INCLUDE HOT WORK (EXTRUSION WELDER) ON LANDFILL. VERIFY THAT ALL REPAIR AREAS HAVE A GOOD SEAL WITH GROUT. MONITOR AIR AT WORK FACE. WORKING IN EXCAVATION DEEPER THAN 4FT REQUIRES SHORING. USE LADDER FOR ENTERING AND EXITING EXCAVATIONS. MAINTAIN COMMUNICATION AND UTILIZE BUDDY SYSTEM.
0820	T. COLERA, O. CAMACHO & B. SHUMAKER SET-UP AND INSTALL SHORING AT RIPZ-27 AND RIPZ-39 EXCAVATIONS IN GALLERY WELL ROAD.
0835	FLSI CREW MEMBERS MOBILIZE EQUIPMENT TO RIPZ-39 EXCAVATION AREA. L. BAILEY ESTABLISH AIR MONITORING AT WORK AREA.
0910	SHORING INSTALLATION COMPLETED.
0920	FLSI START REPAIR OF LINER AT RIPZ-39 AND ADJACENT PUNCTURE. USED PRE-FABRICATED BOOT AROUND RIPZ-39. (BENCH 2)
1020	COMPLETED REPAIRS AT RIPZ-39 LOCATION AND PERFORMED SUCCESSFUL VACUUM TEST. RESTORE DRAINAGE MAT AND FILTER FABRIC.
1040	RELOCATE EQUIPMENT TO RIPZ-13 EXCAVATION AREA. L. BAILEY ESTABLISH AIR MONITORING AT WORK AREA.
1055	START REPAIR OF RIPZ-13 AND TWO ADJACENT PUNCTURE LOCATIONS. (BENCH 1)

PROJECT NAME: <i>Casualia RI</i>	PROJECT NO.: <i>28906580</i>	DATE: <i>11-13-2007</i>
RECORDER: <i>T. COLEBA</i>	WEATHER:	
URS PERSONNEL: <i>T. COLEBA, L. BAILEY, LBJR, M. BAILEY, O. CAMACHO, B. SHUMAKER</i>		
SUB CONTRACTORS/VISITORS: <i>UNITED RENTALS, FLSI</i>		
PROJECT LOCATION AND GENERAL ACTIVITY: <i>CONTINUED FROM PAGE 1</i>		

TIME	DESCRIPTION/NOTES
<i>1135</i>	<i>COMPLETED BOOT AND PATCH REPAIRS AT RIPZ-13 EXCAVATION</i>
<i>1145</i>	<i>VACUUM TESTED EACH REPAIR AREA - PASSED.</i>
<i>1210</i>	<i>RESTORED DRAINAGE MAT AND GEOTEXTILE OVER REPAIR AREAS.</i>
<i>1220</i>	<i>LANCH BREAK</i>
<i>1320</i>	<i>RELOCATE EQUIPMENT TO RIPZ-38 AND RIPZ-38A EXCAVATIONS, RZ-38A IS THE WESTERN MOST EXCAVATION ON GALLERY WELL RD WHERE THE CPT PUNCTURED THE LINER BUT IT WAS DECIDED THAT THE PIEZOMETER SHOULD BE INSTALLED FURTHER EAST ON THE ROAD.</i>
<i>1325</i>	<i>START REPAIR OF RIPZ-38 AND 38A CONCURRENTLY.</i>
<i>1340</i>	<i>START REPAIR OF RIPZ-27 (ADJ TO GALLERY WELL)</i>
<i>1420</i>	<i>COMPLETED REPAIRS AT RIPZ-38, 38A AND 27.</i>
<i>1425</i>	<i>PERFORMED VACUUM TEST ON REPAIR LOCATIONS - ALL PASSED.</i>
<i>1435</i>	<i>RESTORED DRAINAGE MAT AND GEOTEXTILE OVER REPAIR AREAS</i>
<i>1500</i>	<i>DECONED EQUIPMENT AND STAGED IN FRONT PARKING LOT.</i>
<i>1510</i>	<i>FINAL INSPECTION OF REPAIR AREAS. ALL PASSED.</i>
<i>1550</i>	<i>FLSI DEPART OFF-SITE.</i>

PROJECT NAME: <i>CASMAIA RI</i>	PROJECT NO.: <i>28906580</i>	DATE: <i>11-13-2007</i>
RECORDER: <i>T. COLERA</i>	WEATHER:	
URS PERSONNEL:		
SUB CONTRACTORS//VISITORS:		
PROJECT LOCATION AND GENERAL ACTIVITY: <i>CASMAIA LANDFILL LINER REPAIR (P/S)</i>		
<i>EXCAVATION DIMENSIONS/REPAIR LOCATIONS</i>		

TIME	DESCRIPTION/NOTES (NOT TO SCALE)
	<i>RIPZ-39 (BENCH ROAD 2)</i>
	<p>The diagram shows a rectangular excavation area labeled RIPZ-39. A dashed line above the excavation is labeled 'DRAINAGE DITCH'. A north arrow 'N' is on the left. The excavation is 12.5 ft wide. Two repair locations are marked with stars: RIPZ-39 and 39A. The distance from the left edge to RIPZ-39 is 7 ft, and from RIPZ-39 to 39A is 7 ft. The distance from 39A to the right edge is 5 ft. The excavation is 6 ft deep, with a note '(3ft DEEP)'. A 2.5 ft offset is shown from the top left corner to the ditch line.</p>
	<i>RIPZ-13</i>
	<p>The diagram shows a rectangular excavation area labeled RIPZ-13. A dashed line above the excavation is labeled 'DRAINAGE DITCH'. A north arrow 'N' is on the left. The excavation is 13 ft wide. Three repair locations are marked with stars: RIPZ-13, 13A, and 13B. The distance from the left edge to RIPZ-13 is 5.5 ft, from RIPZ-13 to 13A is 5 ft, and from 13A to 13B is 5 ft. The excavation is 7 ft deep, with a note '(3ft DEEP)'. The left side of the excavation is labeled 'BENCH ROAD 1'.</p>

PROJECT NAME: <i>CASUALIA RI</i>	PROJECT NO.: <i>28906580</i>	DATE: <i>11-13-2007</i>
RECORDER: <i>T. COLERA</i>	WEATHER:	
URS PERSONNEL:		
SUB CONTRACTORS//VISITORS:		
PROJECT LOCATION AND GENERAL ACTIVITY: <i>CASUALIA LANDFILL LINER REPAIR (P/S)</i>		
<i>EXCAVATION DIMENSIONS / REPAIR LOCATIONS</i>		

TIME	DESCRIPTION/NOTES (NOT TO SCALE)
	<p><i>PATCH CPT 38A (GALLERY WELL RD)</i></p>
	<p><i>RIPZ-38 (GALLERY WELL RD)</i></p>
	<p><i>RIPZ-27 (GALLERY WELL RD)</i></p>





LANDFILL LINER REPAIR & TEST LOG  
CASMALIA LANDFILL

Page 1 of 1

Date	Repair No.	Repair Location	Repair Description	Vacuum Test			
				Date	Time	Pass/Fail	Name
11-13-07	39A	ADJACENT TO RIPZ-39 IN BENCH ED 2, APPROX 5.5ft SOUTH OF DRAINAGE DITCH.	12" X 12" PATCH	11-13-07	10:17 am	PASS	R.G.
11-13-07	RIPZ-39	WEST SIDE OF RIPZ-39 EXCAVATION IN BENCH ED 2, APPROX 5.5ft SOUTH OF DRAINAGE DITCH.	18" BOOT w/ 14" SLEEVE	11-13-07	10:20 am	PASS	R.G.
11-13-07	13B	EAST SIDE OF RIPZ-13 EXCAVATION, APPROX 10.5ft EAST OF RIPZ-13, APPROX 6.5ft SOUTH OF DITCH ON BENCH ED 1.	14" X 14" PATCH	11-13-07	11:40 am	PASS	R.G.
11-13-07	13A	CENTER OF RIPZ-13 EXCAVATION, APPROX 5.5ft EAST OF RIPZ-13, APPROX 6.5ft SOUTH OF DITCH ON BENCH ED 1.	18" X 18" PATCH	11-13-07	11:45 am	PASS	R.G.
11-13-07	RIPZ-13	WEST SIDE OF RIPZ-13 EXCAVATION, APPROX 6.5ft SOUTH OF DITCH ON BENCH ED 1.	18" BOOT w/ 14" SLEEVE	11-13-07	11:55 am	PASS	R.G.
11-13-07	38A	WEST EXCAVATION ON GALLERY WELL ED, APPROX 5.5ft SOUTH OF DRAINAGE DITCH.	16" X 16" PATCH	11-13-07	2:20 pm	PASS	R.G.
11-13-07	RIPZ-38	CENTER EXCAVATION IN GALLERY WELL ED, APPROX 6'10" SOUTH OF DRAINAGE DITCH.	20" BOOT w/ 16" SLEEVE	11-13-07	2:25 pm	PASS	R.G.
11-13-07	RIPZ-27	EASTERN EXCAVATION ON GALLERY WELL ED, ADJ TO GALLERY WELL, APPROX 12'3" SOUTH OF DRAINAGE DITCH	20" BOOT / 16" SLEEVE	11-13-07	2:30 pm	PASS	R.G.

NOTES: USED 60 MIL HDPE

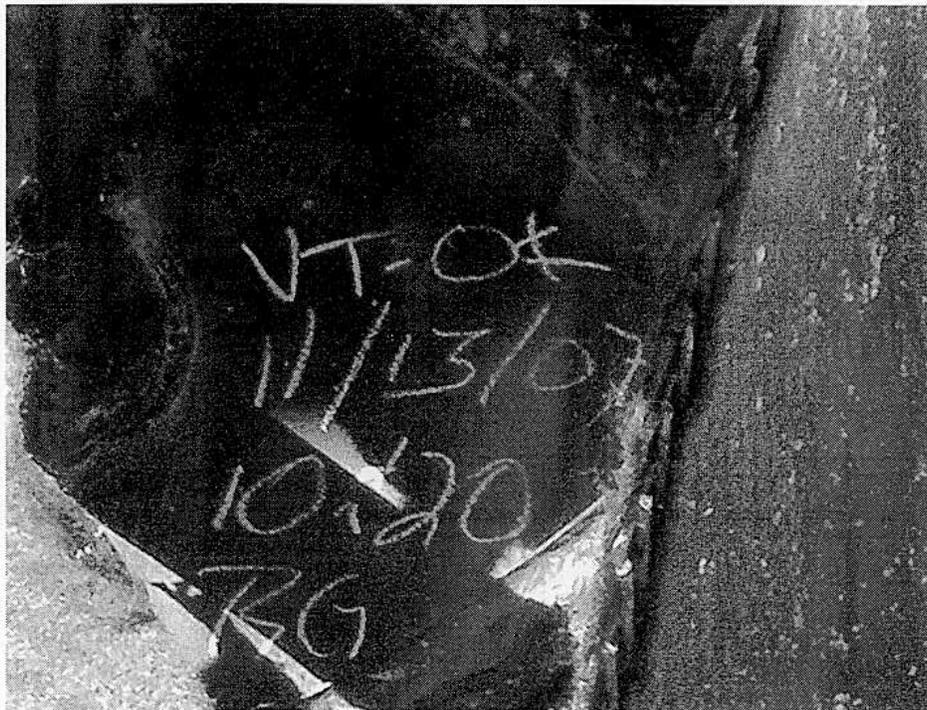
WORK WAS CONDUCTED BY FIELD Lining SYSTEMS, INC (FLSI) FROM AVONDALE, AZ.

VACUUM TESTS WERE CONDUCTED BY RICK GARCIA (FLSI) AND SUPERVISE BY T. COLEMAN & L. BAILEY (URS)





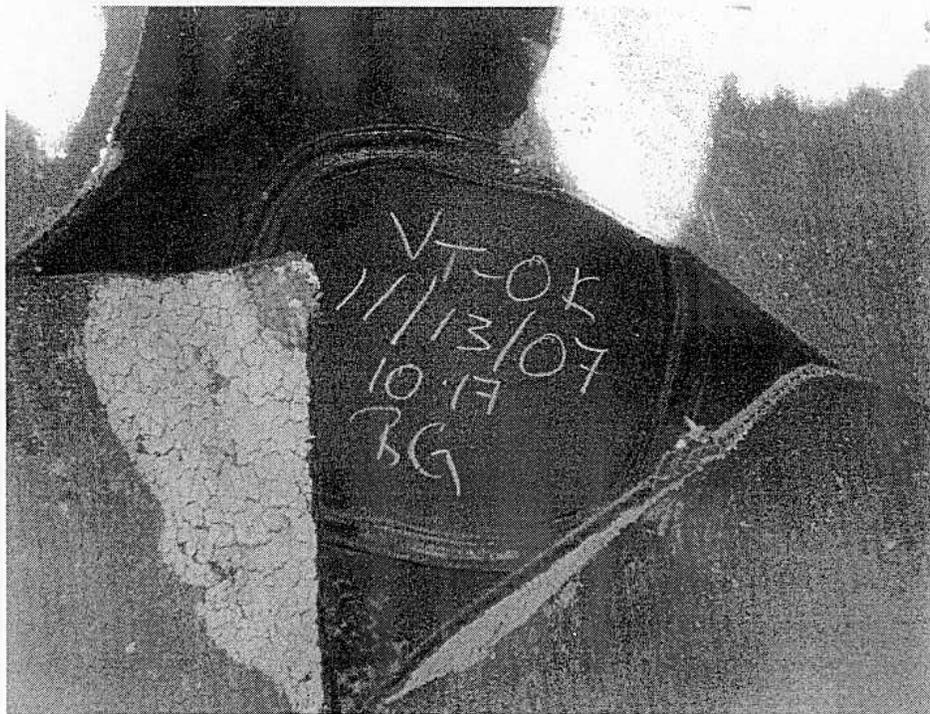
**Repair of RIPZ-39**  
Installation of Boot and Sleeve



**Completion and Test Verification at RIPZ-39**  
Test Results of Boot Repair at RIPZ-39



**Repair of 39A**  
Installation of Patch



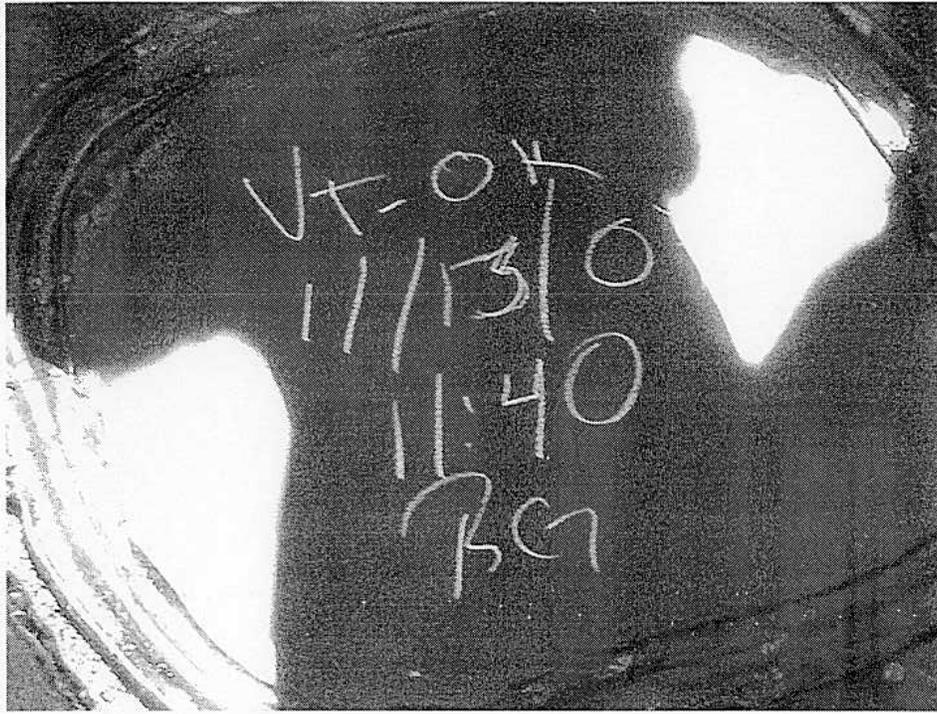
**Completion and Test Verification at 39A**  
Test Results of Patch Repair at 39A



**Repair of RIPZ-13, 13A and 13B**  
Installation of Boot, Sleeve and Patches



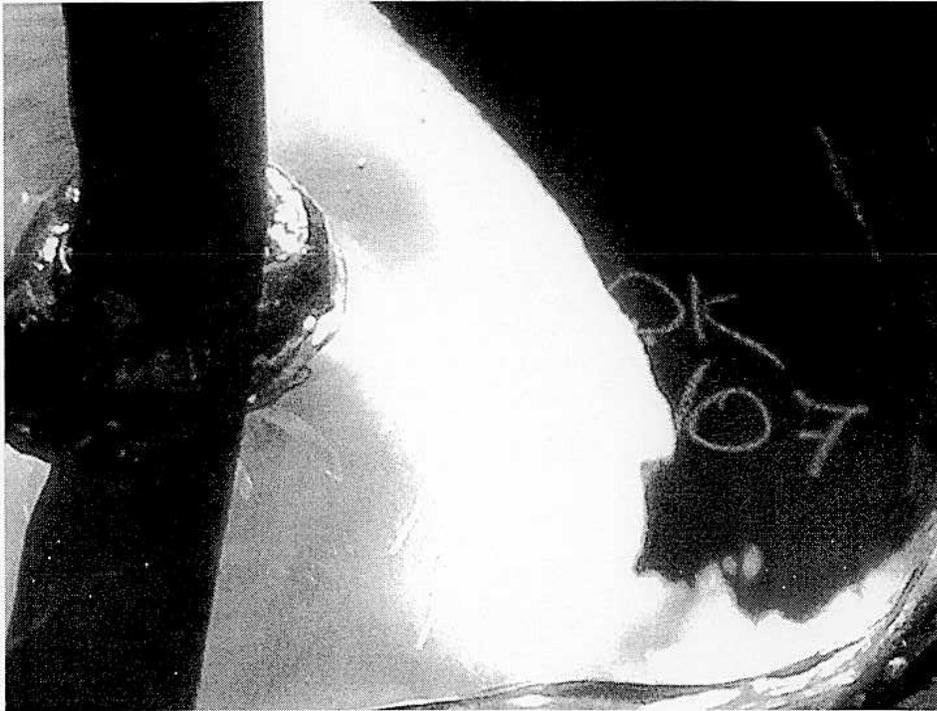
**Repair of RIPZ-13**  
Completion of Boot and Sleeve



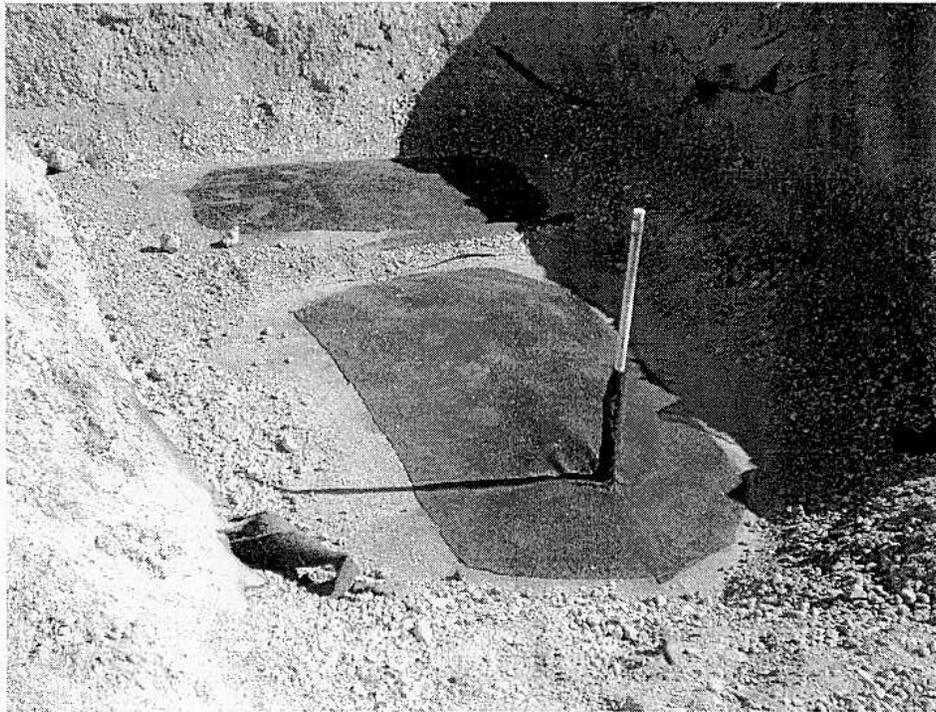
**Completion and Test Verification at 13B**  
Test Results of Patch Repair at 13B



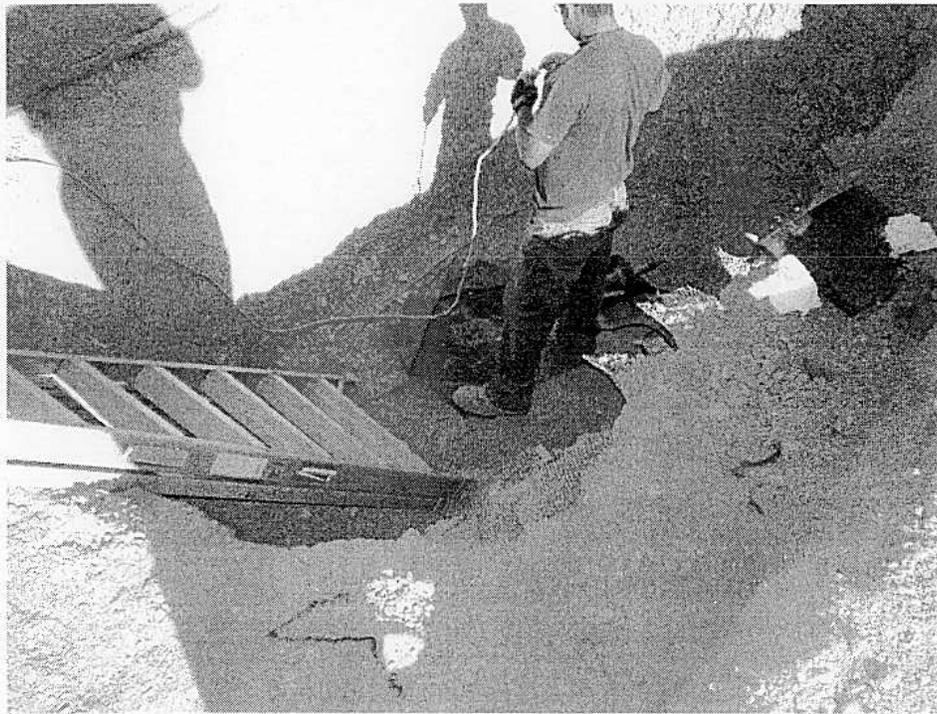
**Completion and Test Verification at 13A**  
Test Results of Patch Repair at 13A



**Completion and Test Verification at RIPZ-13**  
Test Results of Repair at RIPZ-13



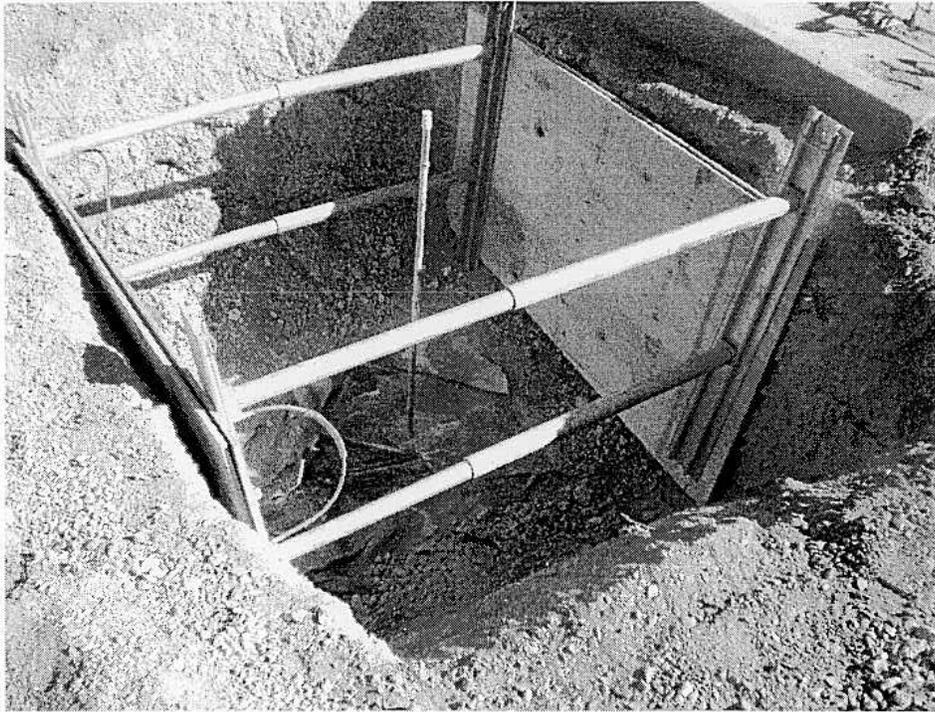
**Restoration at RIPZ-13. 13A and 13B**  
Repair and Restoration of Drainage Mat and Filter Fabric



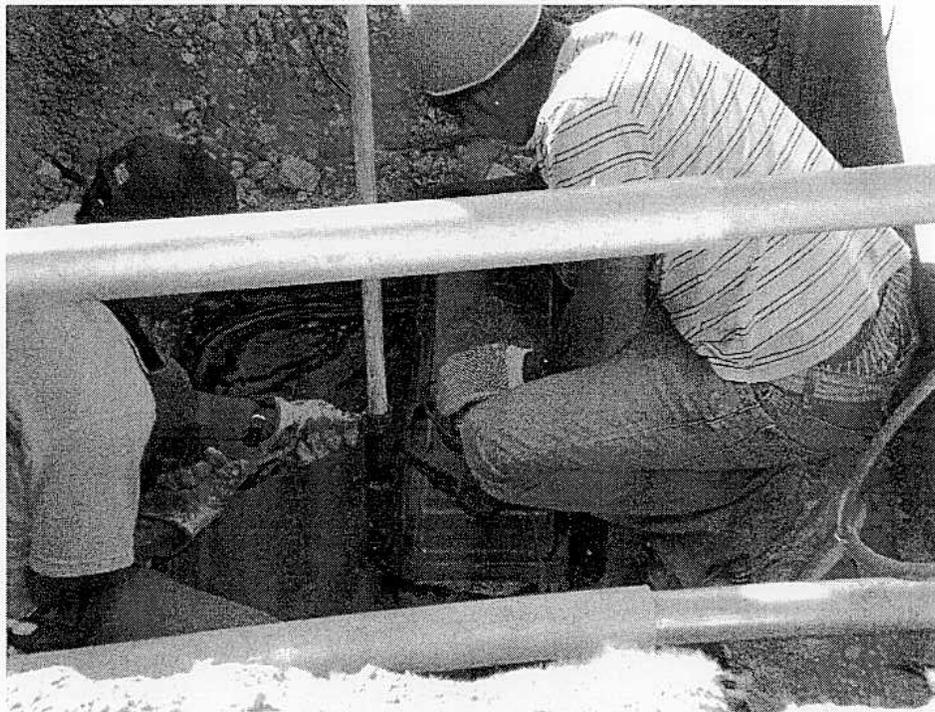
**Repair of 38A**  
Expose Work Surface Prior to Installation of Patch



**Repair of RIPZ-38**  
Installation of Boot and Sleeve



**Repair of RIPZ-27**  
Expose Work Surface Prior to Installation of Boot and Sleeve



**Repair of RIPZ-27**  
Installation of Boot and Sleeve