Form 15

FORM 15 Rev 10/11

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303) 894-2100 Fax: (303) 894-2109

OGCC RECEPTION

Document Number:
400424218

EARTHEN PIT REPORT / PERMIT

This form is to be used for both reporting and permitting pits. Rule 903 describes when a Permit with prior approval, or a Report within 30 days is required for pits. Submit required attachments and forms.

Form Type: ☒ **PERMIT** ☐ **REPORT** OGCC PIT NUMBER: 434035

NOTE: Operator to provide OGCC Pit Number only if available on an existing pit for pit report

ATTACHMENTS

Detailed Site Plan	
Design/Cross Sec	
Topo Map	
Calculations	
Sensitive Area Info	
Mud Program	
Form 2A	
Form 26	
Water Analysis	

OGCC Operator Number: 96850 Contact Name: Karolina Blaney

Name of Operator: WPX ENERGY ROCKY MOUNTAIN LLC

Address: 1001 17TH STREET - SUITE #1200 Phone: (970) 683 2295

City: DENVER State: CO Zip: 80202 Email: Karolina.Blaney@WPXEnergy.com

Pit Location Information

Operator's Pit/Facility Name: NE Ryan Gulch Operator's Pit/Facility Number:

API Number (associated well): 05- 00

OGCC Location ID (associated location): 433759 Or Form 2A #

Pit Location (QtrQtr, Sec, Twp, Rng, Meridian): NWNE-25-1S-98W-6

Latitude: 39.940975 Longitude: -108.337954 County: RIO BLANCO

Operation Information

Pit Use/Type (Check all that apply): Pit Type: ☒ Lined ☐ Unlined

☐ Drilling: (Ancillary, Completion, Flowback, Reserve Pits) ☐ Oil-based Mud; ☐ Salt Sections or High Chloride Mud

☐ Production: ☐ Skimming/Settling; ☐ Produced Water Storage; ☐ Percolation; ☐ Evaporation

☐ Special Purpose: ☐ Flare; ☐ Emergency; ☐ Blowdown; ☐ Workover; ☐ Plugging; ☐ BS&W/Tank Bottoms

☒ Multi-Well Pit: Construction Date: 09/01/2013 Actual or Planned: Planned

Method of treatment prior to discharge into pit: separator & gunbarrel

Offsite disposal of pit contents: ☐ Injection; ☐ Commercial; ☒ Reuse/Recycle; ☐ NPDES; Permit Number:

Other Information: Water Recycling Pit to support completions operations in Ryan Gulch Leasehold

Site Conditions

Distance (in feet) to the nearest surface water: 1564 Ground Water (depth): 507 Water Well: 6281

Is this location in a Sensitive Area? No Existing Location?

Pit Design and Construction

Size of Pit (in feet): Length: 350 Width: 160 Depth: 16 Calculated Working Volume (in barrels): 100100

Flow Rates (in bbl/day): Inflow: 2000 Outflow: Evaporation: Percolation:

Primary Liner. Type: HDPE Thickness (mil): 60

Seconday Liner (if present): Type: HDPE + clay liner Thickness (mil): 40

Is Pit Fenced? Yes Is Pit Netted? Yes Leak Detection? Yes

Other Information: Flow rates will vary

Operator Comments:

Certification

I hereby certify all statements made in this form are, to the best of my knowledge, true, correct, and complete.

Signed: Print Name: Karolina Blaney

Title: Environmental Specialist Email: Karolina.Blaney@WPXEnergy.com Date: 05/24/2013

Approval

Signed: Matthew Lee Title: Director of Cogcc Date: 08/30/2013

Best Management Practices

No	BMP/COA Type	Description

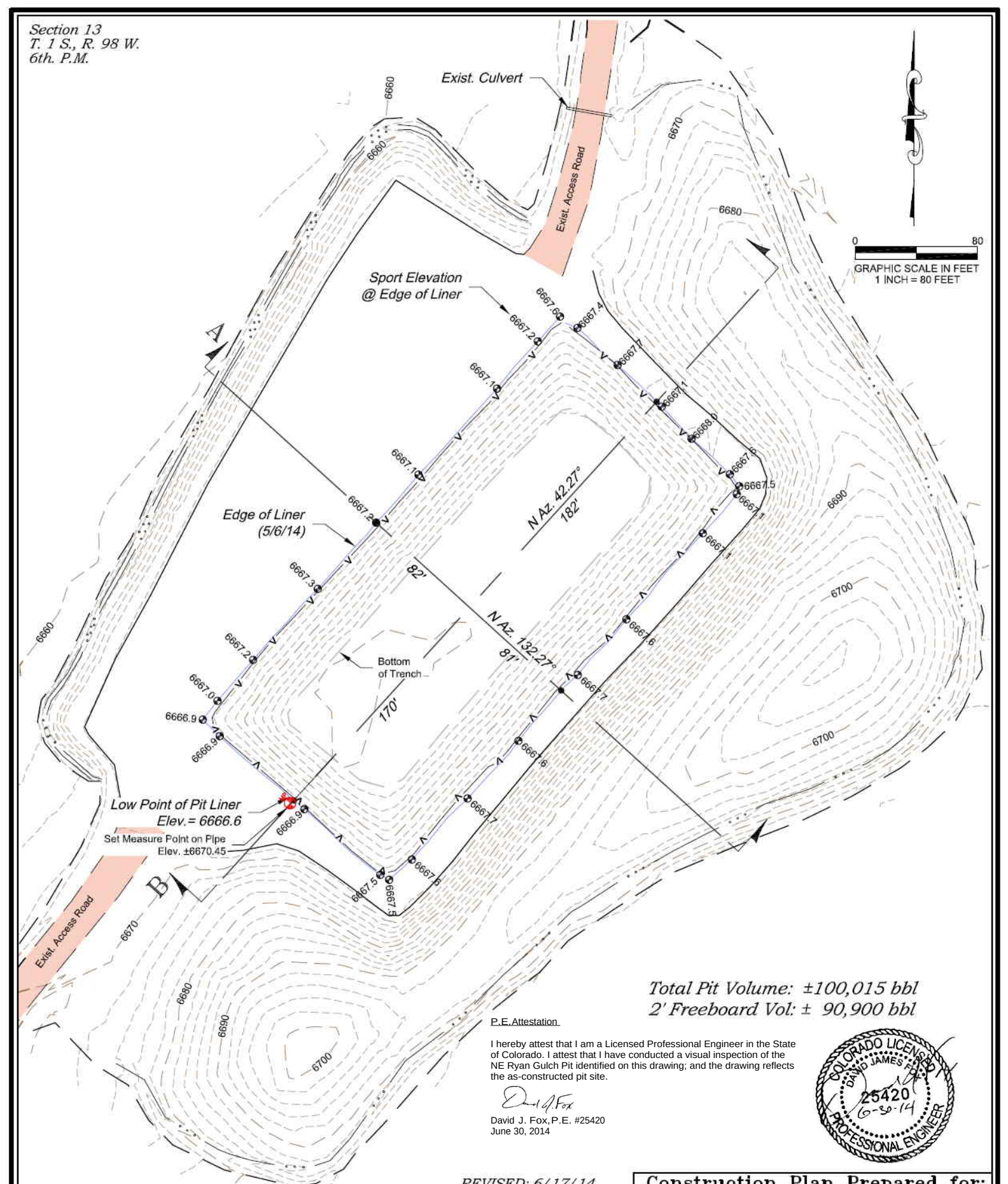
CONDITIONS OF APPROVAL:

COA Type	Description
	GENERAL SITE FORM 2A COAs: Notify the COGCC 48 hours prior to start of frac pad construction, pit liner installation, start of hydrostatic test, and start of hydraulic stimulation operations using Form 42 (the appropriate COGCC individuals will automatically be email notified, including the LGD for hydraulic stimulation operations). Operator must implement best management practices to contain any unintentional release of fluids at the pit location, as well as any fluids conveyed via temporary surface or buried permanent pipelines. Operator must ensure secondary containment for any volume of fluids contained at frac pad site during completion operations (as described on the BMP tab); including, but not limited to, construction of a berm or diversion dike, diversion/collection trenches within and/or outside of berms/dikes, site grading, or other comparable measures (i.e., best management practices (BMPs) associated with stormwater management) sufficiently protective of nearby surface water. Any berm constructed at the frac pad location will be stabilized, inspected at regular intervals (at least every 14 days), and maintained in good condition. Flowback and stimulation fluids from nearby wells must be sent to tanks, separators, or other containment/filtering equipment before the fluids can be placed into the multi-well pit or storage vessel on the frac pad; or into tanker trucks for offsite disposal. The flowback and stimulation fluid tanks, separators, or other containment/filtering equipment must be placed on the frac pad or nearby well pads in an area with additional downgradient perimeter berming. The area where flowback fluids will be stored/reused must be constructed to be sufficiently impervious to contain any spilled or released material. Additional containment shall be required where temporary or permanent pumps and other necessary equipment or chemicals are located. Berms or other containment devices shall be constructed to be sufficiently impervious (preferably corrugated steel with poly liner) to contain any spilled or released material around crude oil, condensate, and produced water storage tanks.

	TEMPORARY SURFACE PIPELINE COAs; Operator shall pressure test pipelines in accordance with Rule 1101.e.(1) prior to putting into initial service any temporary surface pipelines or configuration of the permanent pipeline network. Operator must implement best management practices to contain any unintentional release of fluids along all portions of the surface pipeline route where temporary pumps and other necessary equipment are located. Operator must routinely inspect the entire length of the surface pipeline to ensure integrity. Operator must ensure 110 percent secondary containment for any potential volume of fluids that may be released from the surface pipeline at all stream, intermittent stream, ditch, and drainage crossings. Operator will utilize, to the extent practical, all existing access and other public roads, and/or existing pipeline right-of-ways, when placing/routing the surface pipelines. This will reduce surface disturbance and fragmentation of wildlife habitat in the area.
	FORM 15 EARTHEN PIT PERMIT COAs; The multi-well pit must be double-lined. The pit will also require a leak detection system (Rule 904.e). Delivery and vacuum truck hoses will not be allowed to be placed directly onto the pit liner. Operator will construct a loading/unloading station located next to the pit, to deliver fluids to or remove fluids from the pit by truck. The loading/unloading station shall be designed and utilized to prevent hoses from being dropped into the pits and dragged over the liner, which could lead to liner damage. The loading/unloading station will be the only permitted access for manual fluids transfers to or from the pit. Vehicles will not be allowed to approach the pit any closer than the loading/unloading station. Each station will have a catch basin in case a leak occurs while operations personnel are connecting or disconnecting hoses. Signs clearly marking the truck loading/unloading station shall be provided and maintained by the operator. Operator must submit a professional engineer (PE) approved/stamped as-built drawing (plan view and cross-sections) of the multi-well pit within 30 calendar days of construction. After installation of the uppermost liner and prior to operating the pit, the synthetic liner (s) shall be tested by filling the pit with at least 70 percent of operating capacity of water, measured from the base of the pit (not to exceed the 2-foot freeboard requirement). The operator shall monitor the pit for leaks for a period of 72 hours prior to either draining the pit or commencing operations. Operator shall notify the COGCC Oil and Gas Location Assessment (OGLA) Specialist for Western Colorado (Dave Kubeczko; email dave.kubeczko@state.co.us) 48 hours prior to start of the hydrotest. Hydrotest monitoring results must be maintained by the operator for the life of the pit and provided to COGCC prior to using the pit (via Form 4 Sundry to Dave Kubeczko; email dave.kubeczko@state.co.us) . In lieu of conducting an initial hydrostatic test of the pit, the operator can monitor fluid levels in the pit continuously using a minimum of two pressure transducers located at the upgradient and downgradient ends of the pit (based on the original topographic profile). These pressure transducers should be linked to the operator’s SCADA system such that they can be remotely monitored. In addition, the pit liner will be marked at the two foot freeboard depth line so that operations personnel (as well as COGCC inspectors) can easily verify that the required fluid free board is being maintained. The electronically collected water level measurement data shall be used to confirm changes in pit inflow and outflow during operations based on estimates from truck and/or pipeline delivery or removal activities. Any abnormalities that are noticed during operations will be reported to the operator’s field supervisor immediately so that any necessary follow-up can be scheduled. No portion of any pit that will be used to hold liquids shall be constructed on fill material, unless the pit and fill slope are designed and certified by a professional engineer,

	subject to review and approval by the director prior to construction of the pit. The construction and lining of the pit shall be supervised by a professional engineer or their agent. The entire base of the pit must be in cut. The nearby downgradient hillside below the pit location must be periodically monitored for any day-lighting of fluids throughout pit operations. The multi-well pit must be fenced and netted. The operator must maintain the fencing and netting until the pit is closed. This multi-well pit will comply with Rule 902. PITS - GENERAL AND SPECIAL RULES. e. Pits used for a period of no more than three (3) years for storage, recycling, reuse, treatment, or disposal of E&P waste or fresh water, as applicable, may be permitted in accordance with Rule 903 to service multiple wells. Operator has indicated that this facility may be in operation from 3 to 5 years. Should the operation of this facility continue more than three years, a Form 28 shall be submitted and approved prior to the expiration of the Form 2A and Form 15. The operator shall submit, and receive approval of, a reuse and recycling plan per Rule 907.a.(3), prior to any offsite reuse/recycling of pit fluids. The multi-well pit shall be closed in accordance with Rule 905. Closure of Pits, and Buried or Partially Buried Produced Water Vessels; with an approved Site Investigation and Remediation Workplan, Form 27. Submit additional disposal facilities (wells, pits, etc.), if necessary (i.e., if original disposal option changes), for pit liquid contents to COGCC via a Form 4 Sundry prior to disposal. At the time of pit closure, operator must submit disposal information for solids, if necessary, via a Form 4 Sundry Notice to the COGCC Location Specialist for Western Colorado (Dave Kubeczko; email dave.kubeczko@state.co.us). The disposal method will need to be approved prior to operator starting pit closure.
	Operator will submit a Form 4 indicating date of start of construction and date of commencement of operations within 30 days of commencement of operations.

PE stamped as-built drawing



Total Pit Volume: ±100,015 bbl
2' Freeboard Vol: ± 90,900 bbl

P.E. Attestation

I hereby attest that I am a Licensed Professional Engineer in the State of Colorado. I attest that I have conducted a visual inspection of the NE Ryan Gulch Pit identified on this drawing; and the drawing reflects the as-constructed pit site.

David J. Fox, P.E. #25420
June 30, 2014

COLORADO LICENSED
DAVID JAMES FOX
25420
6-30-14
PROFESSIONAL ENGINEER

REVISED: 6/17/14

136 East Third Street
Rifle, Colorado 81650
Ph. (970) 625-2720
Fax (970) 625-2773

BOOKCLIFF
Survey Services, Inc.

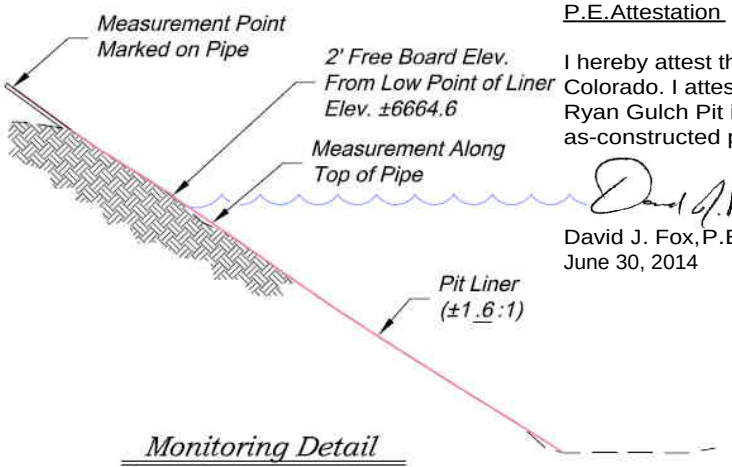
SCALE:	1" = 80'
DATE:	5/27/14
PLAT:	1 of 2
PROJECT:	Highlands
DFT:	cs

Construction Plan Prepared for:

WPXENERGY WPX Energy Rocky Mountain, LLC

NE Ryan Gulch Water Recyling Pit
As-CONSTRUCTED LAYOUT

Section 13
T. 1 S., R. 98 W.
6th. P.M.



Monitoring Detail
Scale: Horiz.: 1" = 10'
Vert. : 1" = 10'

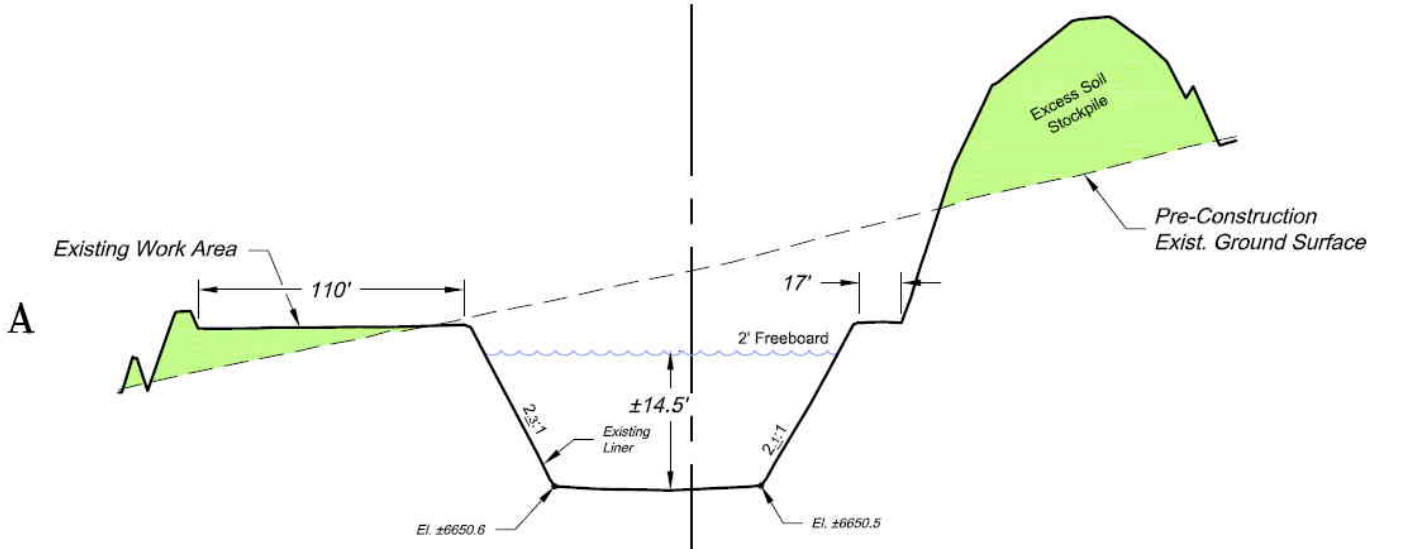
P.E.Attestation

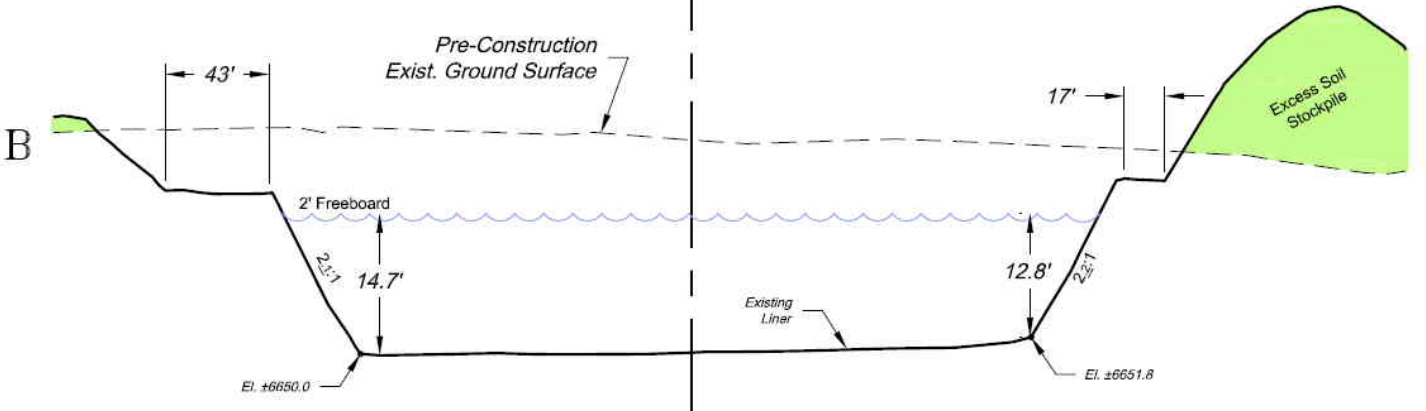
I hereby attest that I am a Licensed Professional Engineer in the State of Colorado. I attest that I have conducted a visual inspection of the NE Ryan Gulch Pit identified on this drawing; and the drawing reflects the as-constructed pit site.

David J. Fox, P.E. #25420
June 30, 2014

COLORADO LICENSED
DAVID JAMES FOX
25420
6-30-14
PROFESSIONAL ENGINEER

℄
RECYCLING PIT





SCALE: Horiz.: 1" = 80'
Vert.: 1" = 20'

REVISED: 6/17/14

136 East Third Street
Rifle, Colorado 81650
Ph. (970) 625-2720
Fax (970) 625-2773
BOOKCLIFF Survey Services, Inc.

SCALE:	As Noted
DATE:	5/27/14
PLAT:	2 of 2
PROJECT:	Highlands
DFT:	cs

Construction Plan Prepared for:
WPXENERGY WPX Energy Rocky Mountain, LLC

NE Ryan Gulch Water Recycling Pit
As-CONSTRUCTED CROSS SECTIONS

Hydrostatic Test Results

Fox Engineering Solutions, Inc.

June 30, 2014

Karolina Blaney
Environmental Specialist
WPX Energy Rocky Mountain, LLC
1058 County Road 215
Parachute, CO 81635

Re: NE Ryan Gulch Pit (OGCC Pit No. 433759) – Hydrotest Results
NE ¼ Section 28, Township 1 South, Range 98 West, 6th P.M, Rio Blanco County, CO

Dear Karolina,

Attached are the results of the 72-hour hydrotest conducted June 24 through June 27, 2014 at WPX Energy's NE Ryan Gulch Pit. The hydrotest indicated no observed loss in liner system integrity. The summary results, attached, include a data and calculation sheet, survey plat with water surface area and elevation data, and an outline of the procedures employed.

As per COGCC requirements, the pit was more than 70% full at the time of the test with water to a depth of approximately 12 feet; and the pit monitored for 72 hours. A weather station, consisting of a National Weather Service Class A evaporation pan and two precipitation gauges, was installed at the site. Survey data including vertical and horizontal control points along with pit water elevations and surface areas, were established and collected by Sexton Surveying Company.

The lining system consists of a primary 60 mil polypropylene liner and a secondary 40 mil polypropylene liner underlain with a tertiary geo-synthetic clay liner. A 200 mil geonet is located between the primary and secondary liners. An interstitial monitoring sump is located on the southwest side of the pit. Visible portions of liner, approximately the top 13 – 14 ft., had no visible tears, delamination or seam failures. The liner installation had recently been completed and appeared to be in excellent condition.

The fluid level of the pit dropped 0.804 inches over the 72-hour test duration. Correspondingly, evaporation and precipitation measurements provided a calculated or expected fluid level drop of 0.795 inches. An evaporation pan coefficient of 0.72 was applied to the gross pan evaporation.

In conclusion, the hydrotest results indicated no observed loss in liner system integrity. The mass balance calculations, utilizing measured evaporation and precipitation, correlated to within 0.009 inches of the fluid level change in the pit. The interstitial monitoring sump was dry at both the initiation and termination of the hydrotest. Continued monitoring of the interstitial sump is recommended.

Respectfully submitted,

David Fox, P.E.
Fox Engineering Solutions, Inc.
670 Canyon Creek Drive
Grand Junction, CO 81507
Ph: (970) 250-5505
Email: coloradofox@bresnan.net

Hydrostatic Pit Testing
Data Collection & Computation Form

Fox Engineering Solutions, Inc.

Pit Owner:	WPX Energy Rocky Mountain, LLC
Pit Name:	NE Ryan Gulch Pit
COGCC Facility No.	433759
Pit Location:	NE 1/4 Section 25, T1S, R98W, 6th P.M.
	Latitude: N 39.940975° Longitude: W108.337954° (NAD83)
Reported Liner:	60/40 mil Polyethylene with GCL
Approximate Elevation:	6668 ft.
Test Conducted By:	David Fox P.E., Fox Engineering Solutions, Inc.

Test Initiation:

Date:	6/24/2014
Time:	10:30 AM
Total Duration:	72 hours

Test Termination:

Date:	6/27/2014
Time:	10:30 AM

	Length	Width	Area		Comments
Tributary Pit Liner Surface Area (ft^2):	-	-	58,068	$ft.^2$	**Surveyed by Sexton Survey**
Initial Pit Water Surface Area:	-	-	42,387	$ft.^2$	**Surveyed by Sexton Survey**
Final Pit Water Surface Area:	-	-	42,387	$ft.^2$	**Surveyed by Sexton Survey**
Average Pit Surface Area:			42,387	$ft.^2$	

Initial Pit Fluid Level:	**6662.997**	**ft.**
Final Pit Fluid Level:	**6662.930**	**ft**
Difference	**0.067**	**ft or**
Est. Fluid Depth: 12 - 13 ft.	**0.804**	**inches**

Evaporation Pan Installed: Yes — **Location:** NE side of pit

Measured Gross Pan Evap.: (During Test Duration)	**1.104**	**inches**
Evaporation w/ Pan Coeff. 0.72 (During Test Duration)	**0.795**	**inches**

Rain Gauge Installed: Yes - 2 Gauges — **Location:** NE side of pit

Recorded Precipitation:	**0.00**	**inches**
Equiv. 72-Hour Precip. Inflow:	**0.00**	**inches**

Other Inflow/Outflow:

Inflow (gal)	**0**	**Equivalent Inflow:**	**0.00**	**inches**
Outflow (gal)	**0**	**Equivalent Outflow:**	**0.00**	**inches**

Calculated Fluid Level Change in Inches: (+ indicates fluid level increased)

(Precipitation - 72% Pan Evaporation + Inflows - Outflows)	**-0.795**	**inches**
Measure Change in Inches: (+ indicates fluid level increased)	**-0.804**	**inches**
Difference between Calculated and Measured Pit Fluid Level:	**0.009**	**inches**

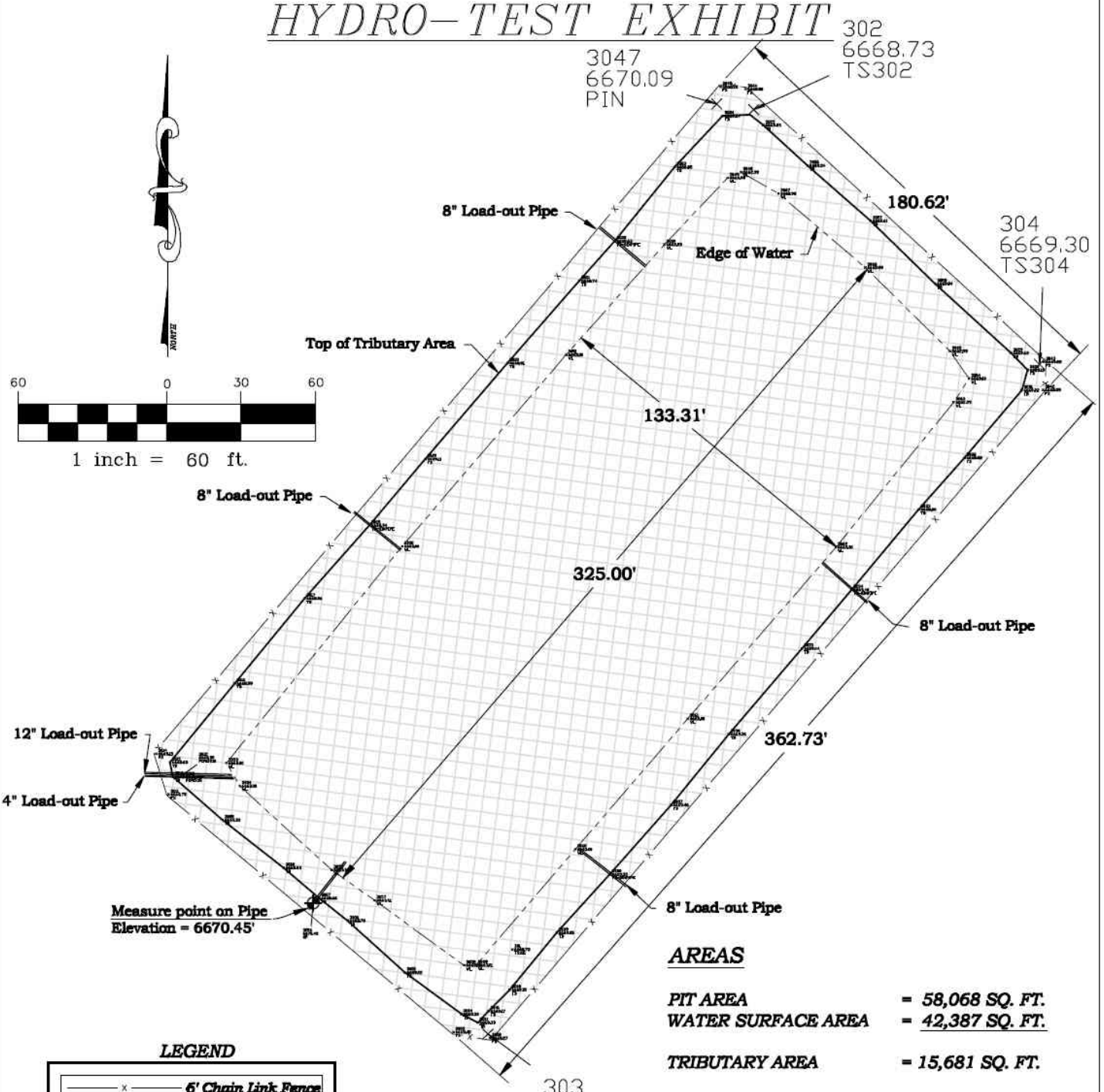
Summary: No observed loss in liner integrity. Fluid level drop correlated with evaporation & precipitation measurements.

Weather: Mostly sunny with intermittent clouds. Temperatures 60° - 85°.

Produced water fluid level at approximate 12 to 13 ft. depth. Liner system is new.
Visible portion of liner, approximately the top 13 - 14 ft., had no visible tears, delamination or seam failures.

Comments:Sexton Survey utilized a Trimble Total Station for required area and elevation measurements.
WPX Energy staff indicated that no fluids were transferred from or to the pit during the duration of the test.
Evaporation pan placed within the fenced and netted area of the pit site.

HYDRO–TEST EXHIBIT



AREAS

PIT AREA	= 58,068 SQ. FT.
WATER SURFACE AREA	= 42,387 SQ. FT.
TRIBUTARY AREA	= 15,681 SQ. FT.

LEGEND

6' Chain Link Fence

Bird Net
Size as Follows:
Top net = 3" grid
Side net = 1" grid

HYDROTEST RESULTS

WATERLINE ELEVATIONS

JUNE 24, 2014 @ 10:30 am Elev. = 6662.997'
JUNE 27, 2014 @ 10:30 am Elev. = 6662.930 '

THE SEXTON SURVEY COMPANY
127 E. 5TH ST
RIFLE CO. 81650
970-625-3711
Scott Blackard, PLS

NE1/4 of Section 25
T. 1 S., R. 98 W. of the 6th P.M.
COSP NAD 83 CENTRAL ZONE
LAT: 39.940975°
LONG: -108.337954°

JOB. NO: 13039
NAME: RYAN GULCH
DATE: 6/24/14

Hydro-test Exhibit Prepared for:
WPX Energy Rocky Mountain, LLC

NE Ryan Gulch Water Recycling Pit
Hydrostatic Pit Test

Hydrostatic Testing Procedures for COGCC Earthen Pits

Vers. 6.0 12-15-11 ©

Fox Engineering Solutions, Inc

The purpose for hydrostatic testing earthen pits is to comply with COGCC approval conditions for verifying the fluid holding integrity of the pit lining system. These procedures are specific to existing or active earthen pits holding oil and gas related fluids including, but not limited to, produced water. During testing, the pit shall have fluid level as high as practical, without encroaching into the 2 ft. freeboard, and the test shall be conducted for a minimum of 72 hours, if practical. Visible portions of the liner, including the anchor trench and seams, shall be inspected for defects. The test shall be scheduled and coordinated with personnel to ensure that oil and gas activities do not interfere with the test. Testing procedures may be subject to changes as dictated by field and climatic factors. All personnel involved with testing, while onsite, shall comply with their respective EH&S requirements.

- If practical, a sign shall be placed in a conspicuous location during the test stating “Hydrostatic testing in Progress, Pit Closed to All Water Hauling Activities”. Contact information shall also be placed on the sign.

- A semi-permanent datum elevation point shall be established at the pit location. The surface area of the water surface and the surface area of the liner area, tributary to the pit shall be measured. The date and time of each measurement shall be documented.

- The pit fluid level; fluid surface area; and the lined surface area, tributary to the pit, shall be measured and recorded at the beginning of the test. The pit fluid level shall be measured again at the end of the test. A survey grade total station shall be utilized for accuracy to capture this information. The date and time of measurements shall be documented.

- A 4” diameter official rain gauge with funnel inlet shall be installed at the pit site. Precipitation shall be recorded for the duration of the hydrostatic test.

- During ice-free periods, pan evaporation shall be measured during the duration of the test following the procedures established by the National Weather Service – NOAA in the document entitled “National Weather Service - Observing Handbook No. 2, dated July 1989. A Class A evaporation pan shall be placed at the site, or as near as practical, with evaporation measured per established procedures. During ice-over periods at the pit, evaporation is assumed negligible and evaporation measurements will not be taken.

- For the duration of the test, all inflows and outflows, such as truck and piped transfers, shall cease. If the cessation of inflows and outflows is not practical, all pit inflows and outflows shall be accurately metered and documented during the test. 24-hour surveillance monitoring may be warranted.

- If no precipitation has occurred during the test, compare the change in the pit fluid level with the recorded pan evaporation. During ice-over periods, compare the pit levels taken at the start and end of the tests.

- If precipitation has occurred during the test, precipitation falling onto tributary portions of the liner, outside of the fluid surface area, may be added as an inflow to the pit and converted into inches of depth over the fluid surface area. During ice-over and snow conditions, precipitation inflow from tributary portions of the liner may be estimated from snow depth and corresponding water equivalent comparisons at the start and termination of the test. Other factors may also be utilized.

- The calculated change in pit level during the test is: $\Delta L = P + I - O - E$ (all measurements converted to inches)

  Where: ΔL = Change in pit fluid level, P = Precipitation Inflow, E = Evaporation, I = Measured Inflows, O = Measured Outflows

- The measured change in the pit fluid level shall be compared to the calculated change, utilizing precipitation and evaporation data, in the pit fluid level during the test duration. The test procedures and results will be reviewed and analyzed for discrepancies. If the test results indicate integrity issues with the lining system, the test will be repeated.

Fox Engineering Solutions, Inc.
670 Canyon Creek Drive
Grand Junction, CO 81507-9594

Cell (970) 250-5505
Email: coloradofox@bresnan.net

Liner Installation Report

NE RYAN GULCH WATER RECYCLING PIT

APRIL 2014

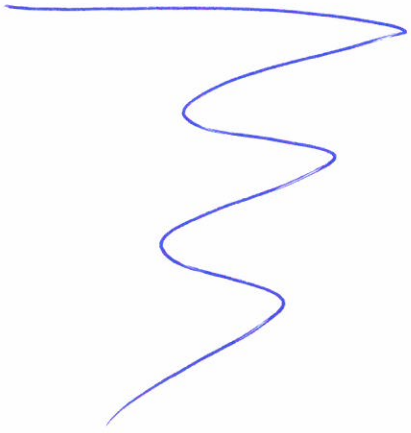
Lange Containment Systems Inc.

5150 Race Court

Denver, CO 80216

THE

WELDS



40 MIL

Lange Containment Systems Inc.

Phone: (800) 446-4898 Fax: (303) 446-8798 LinerGeeks@LangeContainment.com www.LangeContainment.com

TRIAL WELDS

Project Name: NE RYAN GULCH WATER

40 mil microspike Smooth

Date	Time	Machine #	Operator	Machine Temp	Speed / Preheat Temp	Peel		Shear	
						#FTB	#FTB	#FTB	#FTB
4-23-14	12:40Pm	127	Victor Casillas	850°	600	100-102 96-97	106-101 101-99	139	144
4-23-14	12:45Pm	129	Ramon Placencia	850°	600	98-101 94-99	96-100 97-103	141	141

QC Technician: Victor Casillas

Lange Containment Systems Inc.

Phone: (800) 446-4898 Fax: (303) 446-8798 LinerGeeks@LangeContainment.com www.LangeContainment.com

TRIAL WELDS

Project Name: NE RYAN GULCH WATER

40mil HDPE Microspike Smooth

Date	Time	Machine #	Operator	Machine Temp	Speed / Preheat Temp	Peel		Shear	
						#FTB	#FTB	#FTB	#FTB
04-24-14	7:15Am	129	Ramon Placencia	850°	500	107-101 101-98	99-103 94-100	139	144
4-24-14	12:40pm	129	Ramon Placencia	850°	600	99-94 95-100	91-96 99-94	144	140
4-24-14	12:45pm	127	Victor Casillas	850°	600	93-101 98-100	101-99 95-97	142	147

QC Technician: VICTOR CASILLAS

Lange Containment Systems Inc.

Phone: (800) 446-4898 Fax: (303) 446-8798 LinerGeeks@LangeContainment.com www.LangeContainment.com

TRIAL WELDS

Project Name: NE RYAN GULCH WATER

Date	Time	Machine #	Operator	Machine Temp	Speed / Preheat Temp	Peel		Shear	
						#FTB	#FTB	#FTB	#FTB
4-25-14	7:15AM	127	Victor Casillos	850°	500	100-92 89-94	96-99 98-95	141	138
4-25-14	8:00 AM	Extrusion 82	Adrian Santana	525°	300°	100 94	101 107	150	144

QC Technician: VICTOR CASILLAS

60 MIL

Lange Containment Systems Inc.

Phone: (800) 446-4898 Fax: (303) 446-8798 LinerGeeks@LangeContainment.com www.LangeContainment.com

TRIAL WELDS

roject Name: NE RYAN GULCH WATER

Date	Time	Machine #	Operator	Machine Temp	Speed / Preheat Temp	Peel		Shear	
						#FTB	#FTB	#FTB	#FTB
-28-14	7:15Am	127	Victor Casillas	850°	400	139-144 144-133	138-141 129-136	177	186
28-14	7:20Am	129	Ramon Placencia	850°	400	139-150 146-141	144-151 140-139	188	183

QC Technician: VICTOR CASILLAS

Lange Containment Systems Inc.

Phone: (800) 446-4898 Fax: (303) 446-8798 LinerGeeks@LangeContainment.com www.LangeContainment.com

TRIAL WELDS

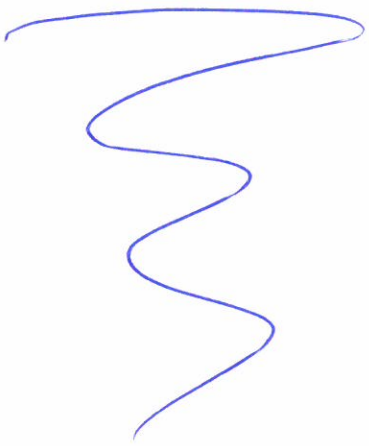
Project Name: NE RYAN GULCH WATER

Date	Time	Machine #	Operator	Machine Temp	Speed / Preheat Temp	Peel		Shear	
						#FTB	#FTB	#FTB	#FTB
1-29-14	7:10 AM	127	Victor Casillas	850°	400	136-144 156-139	141-136 140-139	179	184
-29-14	10:15 AM	82	Adrian Santana	525°	400°	144 147	139 145	181	189

QC Technician: VICTOR CASILLAS

PANEL

LOGS



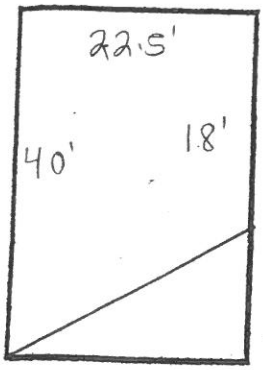
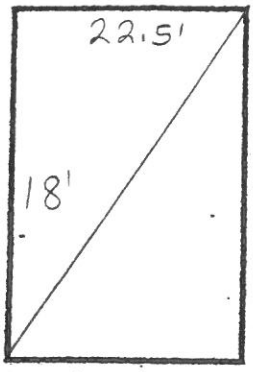
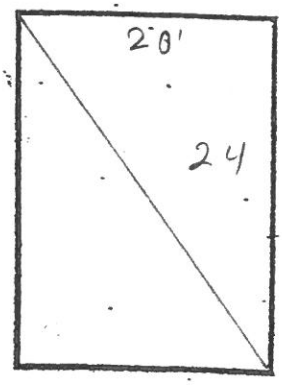
40 MIL

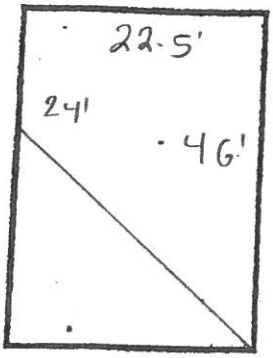
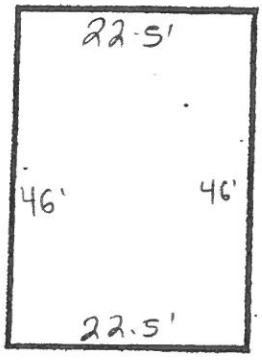
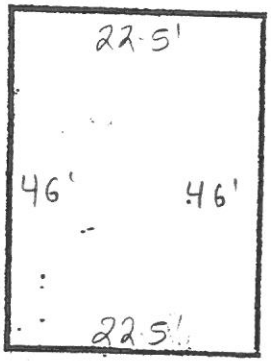
Deployment Date 4-23-14

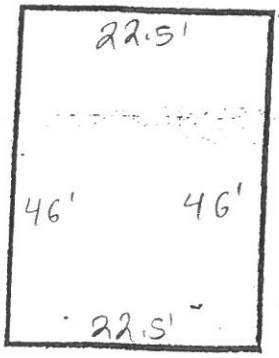
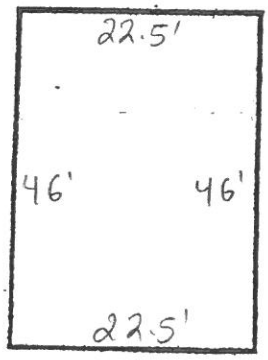
Lange Containment Systems Inc.

Project Name: NE RYAN GULCH WATER Job # _____ Supt: VICTOR CASILLAS

Material: 40mil HDPE Primary ■ Secondary [ ] Pond # _____ Cell # _____ Pad # _____ Other: _____

Panel # 1	Roll # 412027	Panel # 2	Roll # 412027	Panel # 3	Roll # 412027
					
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 652.5	22.5'	Final SF 202.5	22.5'	Final SF 240	22.5'

Panel # 4	Roll # 412027	Panel # 5	Roll # 412027	Panel # 6	Roll # 412027
					
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 787.5	22.5'	Final SF 1035	22.5'	Final SF 1035	22.5'

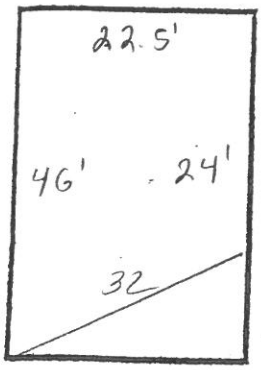
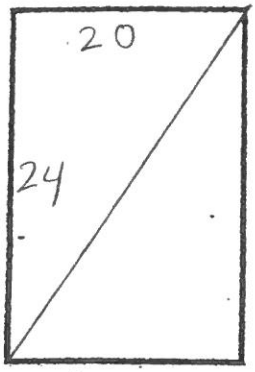
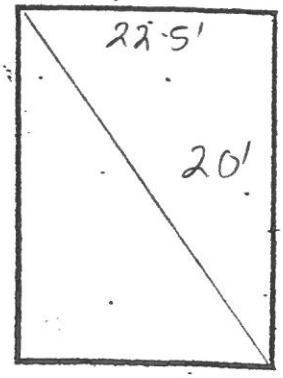
Panel # 7	Roll # 412027	Panel # 8	Roll # 412027
			
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 1035	22.5'	Final SF 1035	22.5'

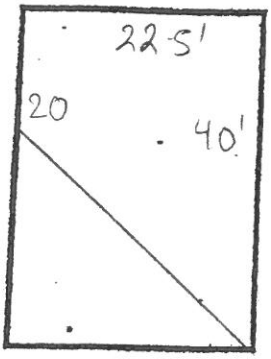
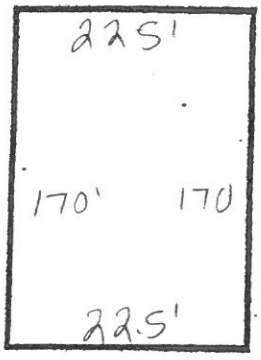
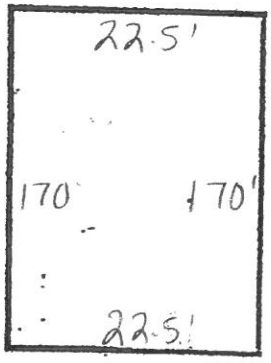
Total Initial SF This Page	SF
Total Final SF This Page	6023 SF
Anchor Trench	
Total Linear feet trench	180 LF
X	
Depth and width allowed in trench	5 LF
= Total SF in Trench	900 SF
Total Pay Area This Page	6923 SF
Total Previous Pages	0 SF
Total Pay Area to Date	6923. SF

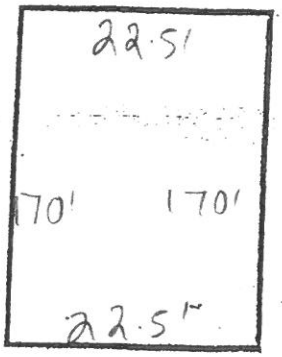
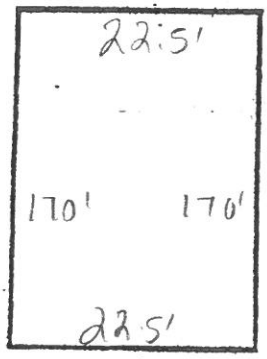
Deployment Date 4-23-2014 — Lange Containment Systems Inc. — Page 2 of 5

Project Name: NE RYAN GULCH WATER Job #: _____ Supt: VICTOR CASILLAS

Material: 40mil HDPE Primary [ ] Secondary [ ] Pond #: _____ Cell #: _____ Pad #: _____ Other: _____

Panel # 9	Roll # 412027	Panel # 10	Roll # 412027	Panel # 11	Roll # 412027
					
Initial SF / Final SF 787.5	Lineal Feet Trench 22.5'	Initial SF / Final SF 240	Lineal Feet Trench 22.5'	Initial SF / Final SF 225	Lineal Feet Trench 22.5'

Panel # 12	Roll # 412027	Panel # 13	Roll # 412027	Panel # 14	Roll # 412027
					
Initial SF / Final SF 675	Lineal Feet Trench 22.5'	Initial SF / Final SF 3825	Lineal Feet Trench 45	Initial SF / Final SF 3825	Lineal Feet Trench 45'

Panel # 15	Roll # 412028	Panel # 16	Roll # 412028
			
Initial SF / Final SF 3825	Lineal Feet Trench 45'	Initial SF / Final SF 3825	Lineal Feet Trench 45'

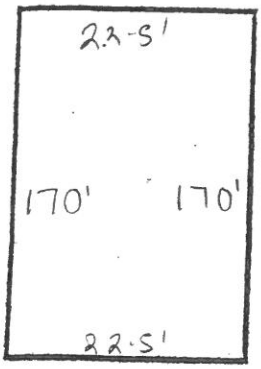
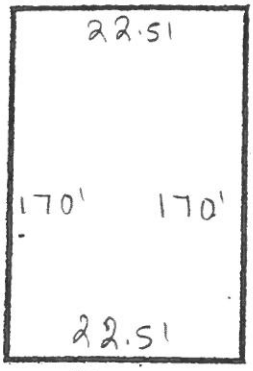
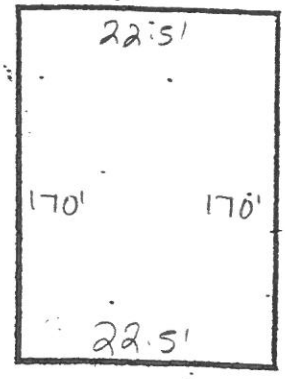
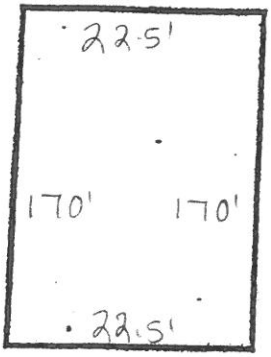
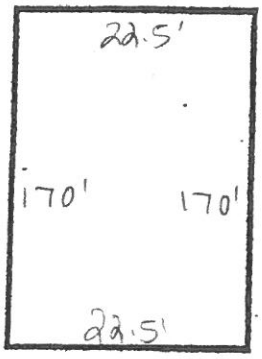
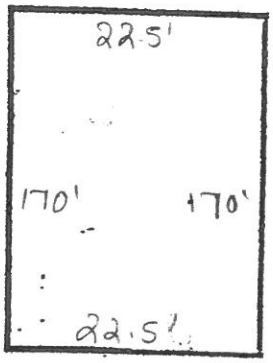
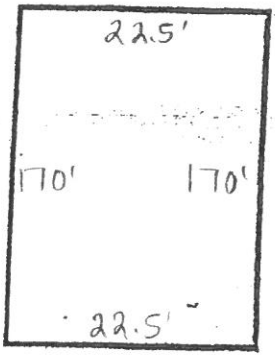
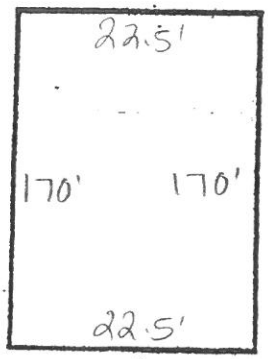
Total Initial SF This Page	SF
Total Final SF This Page	17228 SF
Anchor Trench	
Total Linear feet trench	270 LF
X	
Depth and width allowed in trench	5 LF
= Total SF in Trench	1350 SF
Total Pay Area This Page	18578 SF
Total Previous Pages	6923 SF
Total Pay Area to Date	25'502 SF

Deployment Date 4-23-14

Lange Containment Systems inc.

Project Name: NE RYAN GULCH WATER Job # _____ Supt: VICTOR CASILLAS

Material: 40mil HDPE Primary [ ] Secondary [x] Pond # _____ Cell # _____ Pad # _____ Other: _____

Panel # 17	Roll # 412028	Panel # 18	Roll # 412028	Panel # 19	Roll # 412029
					
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 3825	45	Final SF 3825	45	Final SF 3825	45
Panel # 20	Roll # 412029	Panel # 21	Roll # 412029	Panel # 22	Roll # 412029
					
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 3825	45	Final SF 3825	45	Final SF 3825	45
Panel # 23	Roll # 412030	Panel # 24	Roll # 412030		
					
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench		
Final SF 3825	45	Final SF 3825	45		

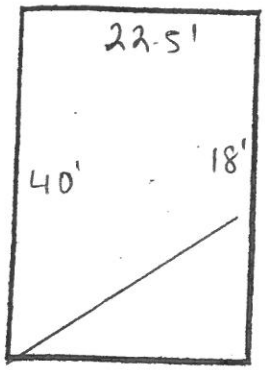
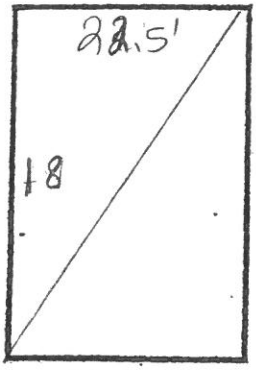
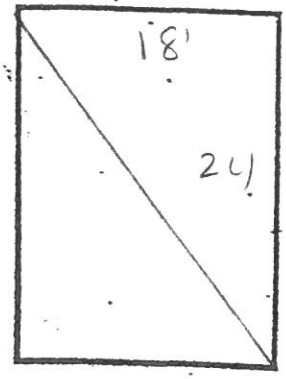
Total Initial SF This Page	SF
Total Final SF This Page	30600 SF
Anchor Trench	
Total Linear feet trench	360 LF
X	
Depth and width allowed in trench	5 LF
= Total SF in Trench	1800 SF
Total Pay Area This Page	32400 SF
Total Previous Pages	25502 SF
Total Pay Area to Date	57902 SF

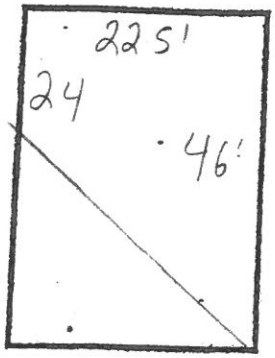
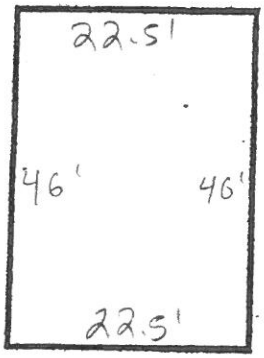
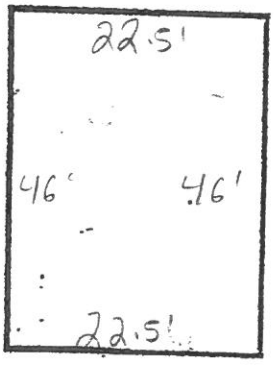
Deployment Date 4-24-14

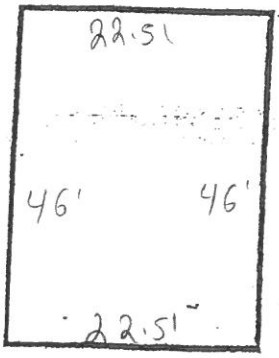
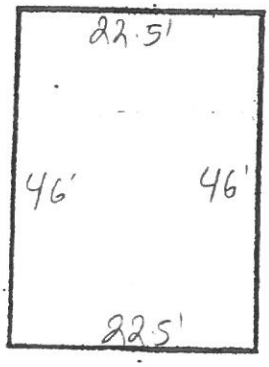
Lange Containment Systems Inc.

Project Name: NE RYAN GULCH WATER Job # _____ Supt: VICTOR CASILLAS

Material: 40 mil HDPE Primary [ ] Secondary [ ] Pond # _____ Cell # _____ Pad # _____ Other: _____

Panel # 25	Roll # 412030	Panel # 26	Roll # 412030	Panel # 27	Roll # 412030
					
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 652.5	22.5'	Final SF 202.5	22.5'	Final SF 216	22.5'

Panel # 28	Roll # 412030	Panel # 29	Roll # 412030	Panel # 30	Roll # 412030
					
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 787.5	22.5'	Final SF 1035	22.5'	Final SF 1035	22.5'

Panel # 31	Roll # 412030	Panel # 32	Roll # 412030
			
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 1035	22.5'	Final SF 1035	22.5'

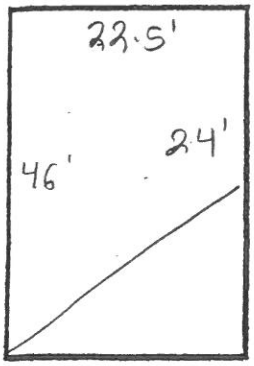
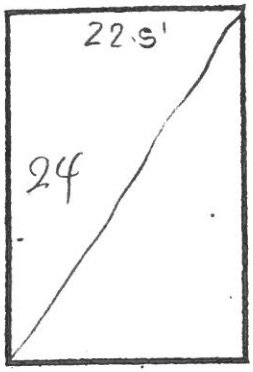
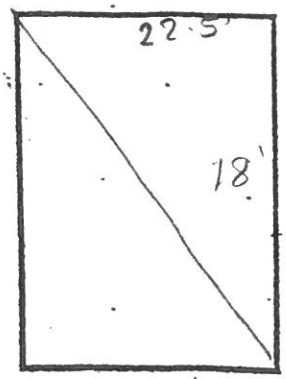
Total Initial SF This Page	SF
Total Final SF This Page	5999 SF
Anchor Trench	
Total Linear feet trench	180 LF
X	
Depth and width allowed in trench	5 LF
= Total SF in Trench	900 SF
Total Pay Area This Page	6899 SF
Total Previous Pages	57902 SF
Total Pay Area to Date	64801 SF

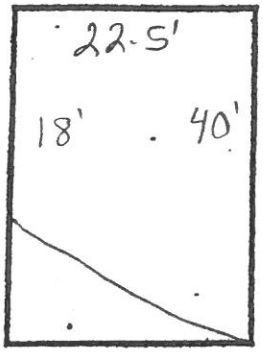
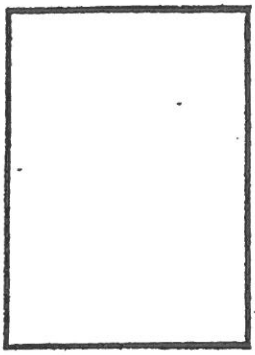
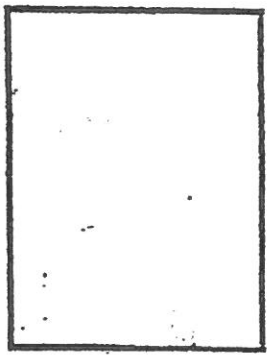
Lange Containment Systems inc.

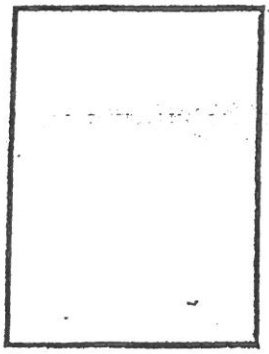
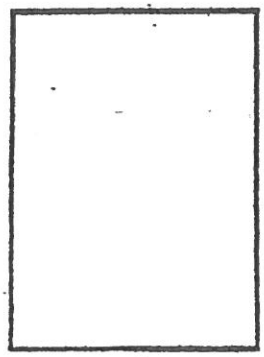
Deployment Date 4-24-14

Project Name: NE RYAN GULCH WATER Job # _____ Supt: VICTOR CASILCAS

Material: 60 mil HDPE Primary [ ] Secondary [ ] Pond # _____ Cell # _____ Pad # _____ Other: _____

Panel # 33	Roll # 412030	Panel # 34	Roll # 412030	Panel # 35	Roll # 412030
					
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 787.5	22.5'	Final SF 270	22.5	Final SF 202.5	22.5'

Panel # 36	Roll # 412030	Panel #	Roll #	Panel #	Roll #
					
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 652.5		Final SF		Final SF	

Panel #	Roll #	Panel #	Roll #
			
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF		Final SF	

Total Initial SF This Page	SF
Total Final SF This Page	1913 SF
Anchor Trench	
Total Linear feet trench	90 LF
X	
Depth and width allowed in trench	5 LF
= Total SF in Trench	450 SF
Total Pay Area This Page	2363 SF
Total Previous Pages	64801 SF
Total Pay Area to Date	67164 SF

60 MIL

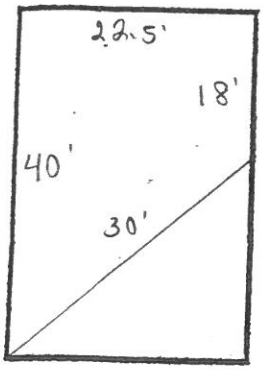
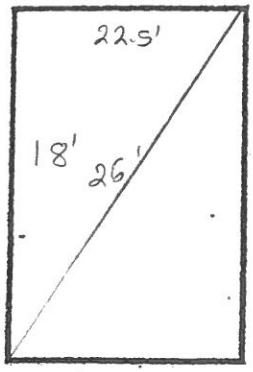
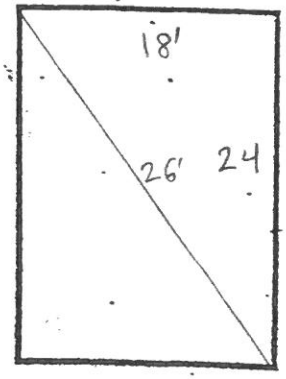
Lange Containment Systems Inc.

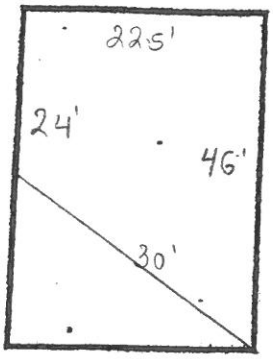
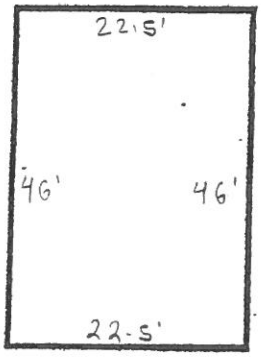
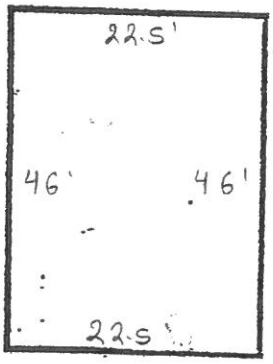
Page 1 of 6

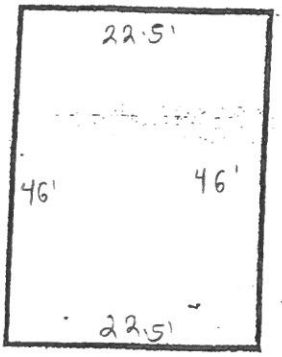
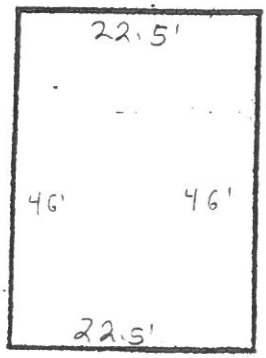
Deployment Date 4-28-2014

Project Name: NE GULCH WATER Job # _____ Supt: VICTOR CASILLAS

Material: 60mil HDPE Primary ■ Secondary [ ] Pond # _____ Cell # _____ Pad # _____ Other: _____

Panel # 1	Roll # 6055	Panel # 2	Roll # 6055	Panel # 3	Roll # 6055
					
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 652.5	22.5'	Final SF 202.5	22.5'	Final SF 216	22.5'

Panel # 4	Roll # 6055	Panel # 5	Roll # 6055	Panel # 6	Roll # 7104
					
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 787.5	22.5'	Final SF 1035	22.5'	Final SF 1035	22.5'

Panel # 7	Roll # 7104	Panel # 8	Roll # 7104
			
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 1035	22.5'	Final SF 1035	22.5'

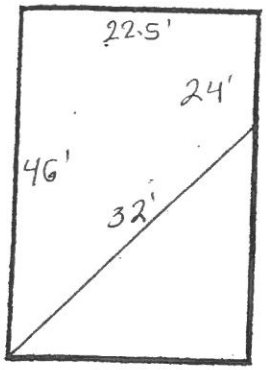
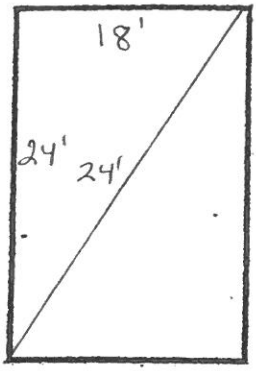
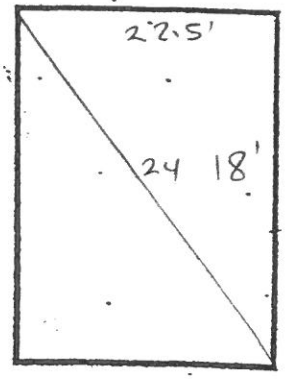
Total Initial SF This Page	SF
Total Final SF This Page	5999 SF
Anchor Trench	
Total Linear feet trench	180 LF
X	
Depth and width allowed in trench	5 LF
= Total SF in Trench	900 SF
Total Pay Area This Page	6899 SF
Total Previous Pages	0 SF
Total Pay Area to Date	6899 SF

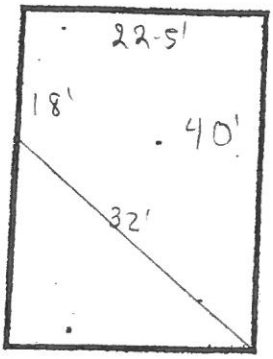
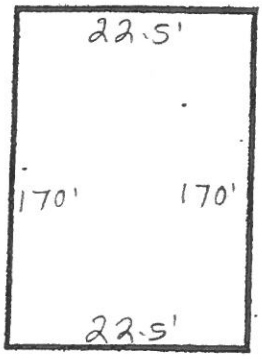
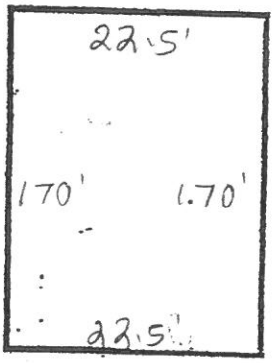
Deployment Date 4-28-2014

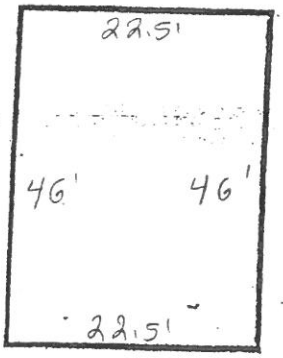
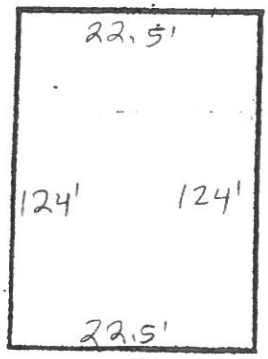
Lange Containment Systems Inc.

Project Name: NE GUIAH WATER Job # _____ Supt: VICTOR CASILLAS

Material: 60 mil HDPE Primary [X] Secondary [ ] Pond # _____ Cell # _____ Pad # _____ Other: _____

Panel # 9	Roll # 7104	Panel # 10	Roll # 7104	Panel # 11	Roll # 7104
					
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 787.5	22.5	Final SF 216	22.5'	Final SF 202.5	22.5'

Panel # 12	Roll # 7104	Panel # 13	Roll # 6038	Panel # 14	Roll # 6038
					
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 652.5	22.5'	Final SF 382.5	45'	Final SF 382.5	45'

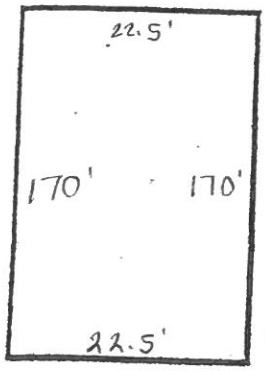
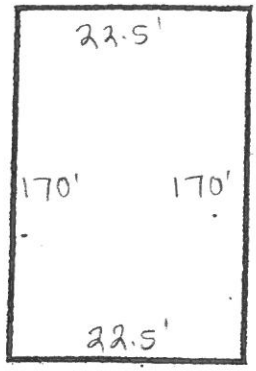
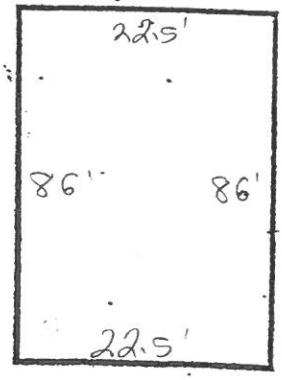
Panel # 15	Roll # 6059	Panel # 16	Roll # 6038
			
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 1035	22.5'	Final SF 2790	22.5'

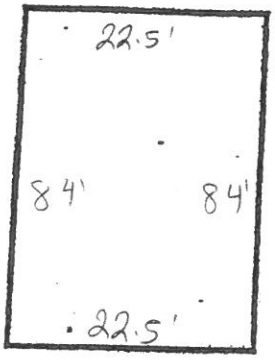
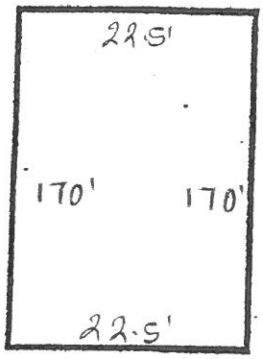
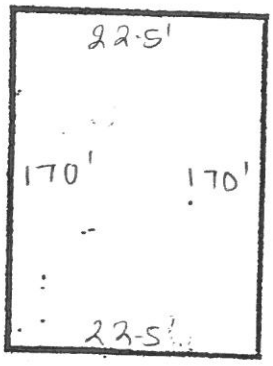
Total Initial SF This Page	SF
Total Final SF This Page	13334 SF
Anchor Trench	
Total Linear feet trench	225 LF
X	
Depth and width allowed in trench	5 LF
= Total SF in Trench	1125 SF
Total Pay Area This Page	14459 SF
Total Previous Pages	6899 SF
Total Pay Area to Date	21358 SF

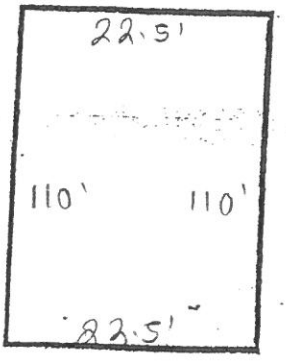
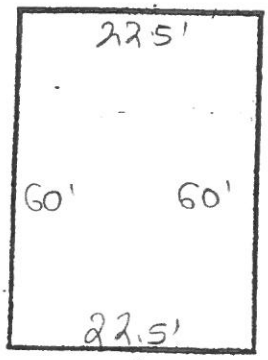
Deployment Date 4-28-2014 — Lange Containment Systems Inc. — Page 3 of 6

Project Name: NE GULCH WATER — Job # _____ — Supt: VICTOR CASILLAS

Material: 60 mil HDPE — Primary [X] Secondary [ ] — Pond # _____ Cell # _____ Pad # _____ Other: _____

Panel # 17	Roll # 6059	Panel # 18	Roll # 6059	Panel # 19	Roll # 6057
					
Initial SF / Final SF 3825	Lineal Feet Trench 45'	Initial SF / Final SF 3825	Lineal Feet Trench 45'	Initial SF / Final SF 1935	Lineal Feet Trench 22.5'

Panel # 20	Roll # 6059	Panel # 21	Roll # 6057	Panel # 22	Roll # 6057
					
Initial SF / Final SF 1890	Lineal Feet Trench 22.5'	Initial SF / Final SF 3825	Lineal Feet Trench 45'	Initial SF / Final SF 3825	Lineal Feet Trench 45

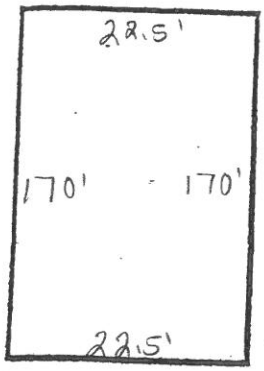
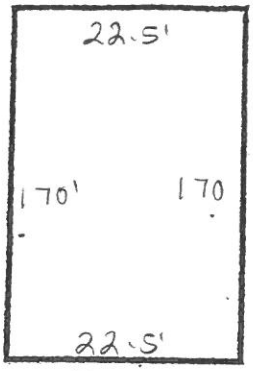
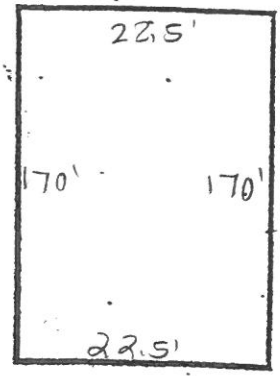
Panel # 23	Roll # 6056	Panel # 24	Roll # 6057
			
Initial SF / Final SF 2475	Lineal Feet Trench 22.5'	Initial SF / Final SF 1350	Lineal Feet Trench 22.5'

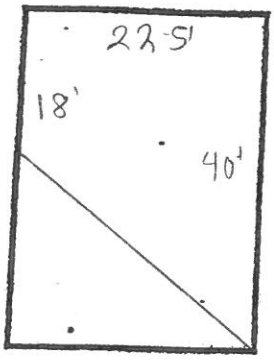
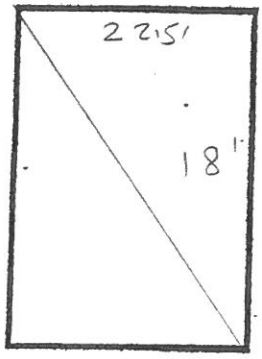
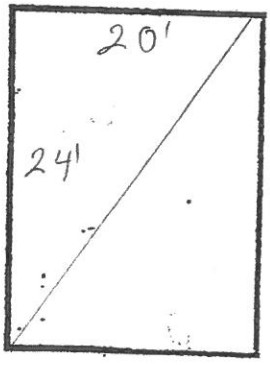
Total Initial SF This Page	SF
Total Final SF This Page	22 950 SF
Anchor Trench	
Total Linear feet trench	270 LF
X	
Depth and width allowed in trench	5 LF
= Total SF in Trench	1350 SF
Total Pay Area This Page	24 300 SF
Total Previous Pages	21 358 SF
Total Pay Area to Date	45658 SF

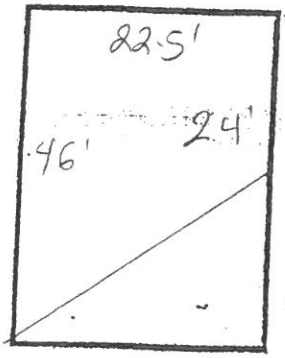
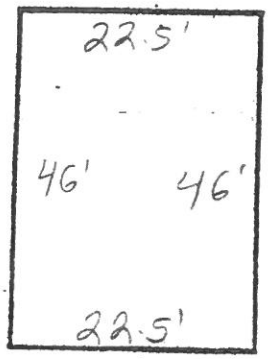
Deployment Date 4-28-2014 — Lange Containment Systems Inc. — Page 4 of 6

Project Name: NC GULCH WATER — Job # — Supt: VICTOR CASILLAS

Material: 60 mil HDPE — Primary [X] Secondary [ ] — Pond # — Cell # — Pad # — Other:

Panel # 25	Roll # 6056	Panel # 26	Roll # 6056	Panel # 27	Roll # 7104
					
Initial SF / Final SF 3825	Lineal Feet Trench 45'	Initial SF / Final SF 3825	Lineal Feet Trench 45'	Initial SF / Final SF 3825	Lineal Feet Trench 45'

Panel # 28	Roll # 6035	Panel # 29	Roll # 6035	Panel # 30	Roll # 6035
					
Initial SF / Final SF 652.5	Lineal Feet Trench 22.5	Initial SF / Final SF 202.5	Lineal Feet Trench 22.5'	Initial SF / Final SF 240	Lineal Feet Trench 20

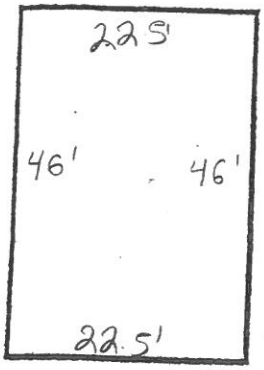
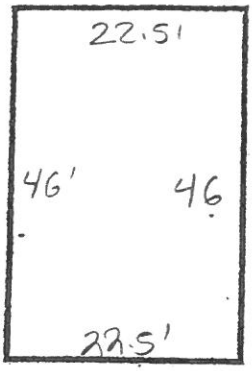
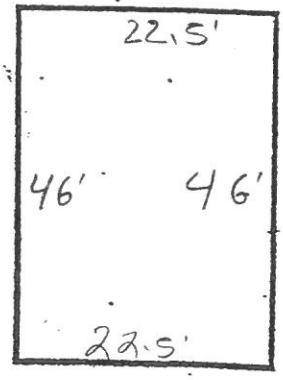
Panel # 31	Roll # 6035	Panel # 32	Roll # 6035
			
Initial SF / Final SF 787.5	Lineal Feet Trench 22.5'	Initial SF / Final SF 103.5	Lineal Feet Trench 22.5'

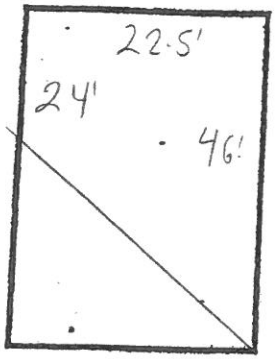
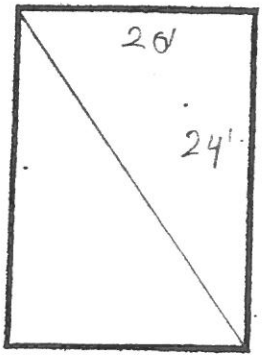
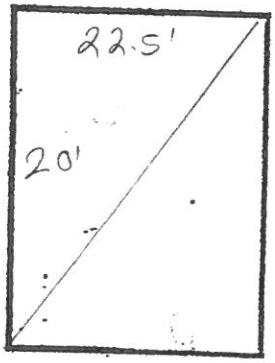
Total Initial SF This Page	SF
Total Final SF This Page	14'393 SF
Anchor Trench	
Total Linear feet trench	245 LF
X	
Depth and width allowed in trench	5 LF
= Total SF in Trench	1225 SF
Total Pay Area This Page	15 618 SF
Total Previous Pages	45 658 SF
Total Pay Area to Date	61 276 SF

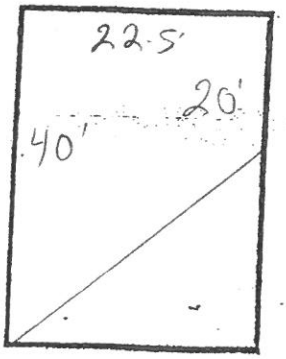
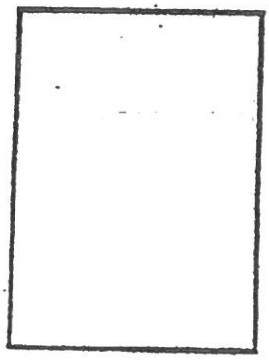
Deployment Date 4-28-2014 — Lange Containment Systems Inc. — Page 5 of 6

Project Name: NE GULCH WATER Job # _____ Supt: VICTOR CASILLAS

Material: GEOMEMBRANE Primary [X] Secondary [ ] Pond # _____ Cell # _____ Pad # _____ Other: _____

Panel # 33	Roll # 6035	Panel # 34	Roll # 6035	Panel # 35	Roll # 6054
					
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 1035	22.5'	Final SF 1035	22.5'	Final SF 1035	22.5'

Panel # 36	Roll # 6054	Panel # 37	Roll # 6054	Panel # 38	Roll # 6054
					
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 787.5	22.5'	Final SF 240	20	Final SF 225	22.5'

Panel # 39	Roll # 6054	Panel #	Roll #
			
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 675	22.5'	Final SF	

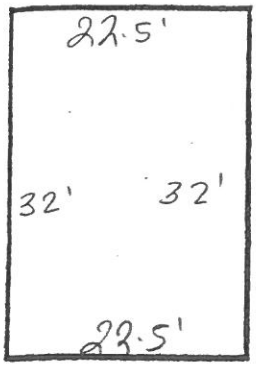
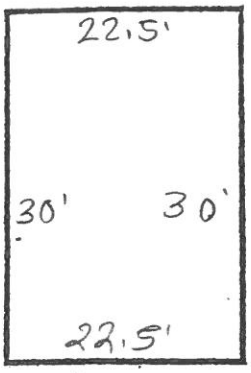
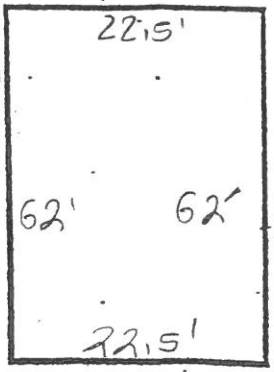
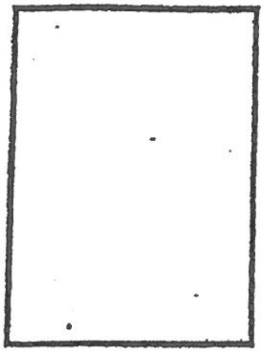
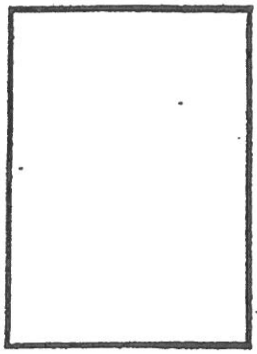
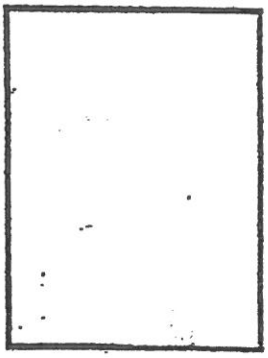
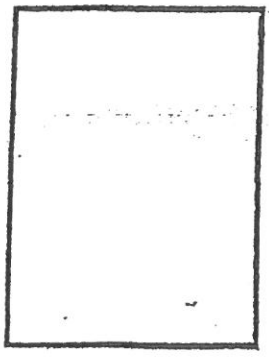
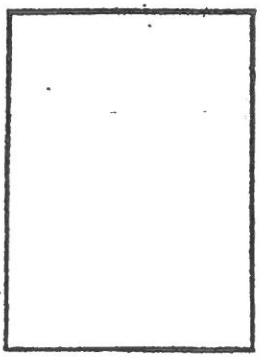
Total Initial SF This Page	SF
Total Final SF This Page	5033 SF
Anchor Trench	
Total Linear feet trench	155 LF
X	
Depth and width allowed in trench	5 LF
= Total SF in Trench	775 SF
Total Pay Area This Page	5808 SF
Total Previous Pages	61276 SF
Total Pay Area to Date	67084 SF

Deployment Date 4-29-14

Containment Systems Inc.

Project Name: NE RYAN GULCH WATER Job # _____ Supt: VICTOR CASILLAS

Material: 60 mil HDPE Primary [X] Secondary [ ] Pond # _____ Cell # _____ Pad # _____ Other: _____

Panel # 40	Roll #	Panel # 41	Roll #	Panel # 42	Roll #
					
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 720	0	Final SF 675	0	Final SF 1395	0
Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
					
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF		Final SF		Final SF	
Panel #	Roll #	Panel #	Roll #	Total Initial SF This Page	SF
				Total Final SF This Page 2790	SF
				Anchor Trench	
				Total Linear feet trench 0	LF
				X	
				Depth and width allowed in trench 0	LF
				= Total SF in Trench 0	SF
				Total Pay Area This Page 2790	SF
				Total Previous Pages 67084	SF
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Total Pay Area to Date 69874	SF
Final SF		Final SF			

SEAMING & AIR PRESSURE

40 MIL

Lange Containment Systems Inc.

Project Name: NE RYAN GULCH WATER
Project Manager:
Superintendent: VICTOR CASILLAS
Reported By: VICTOR CASILLAS

Primary (Secondary) Other:

Job#:

Material: 40 mil HDPE Microspike Smooth

Weld Date	Seam No.	Seam Length	Time	Operator Name / ID#	Mach No.	Mach Temp	Mach Speed	Amb Temp
4-23-14	1-2	18'	12:46 am 12:49 pm	Victor C	127	850°	600	
4-23-14	3-4	24'	12:50 am 12:53 pm	Ramon P	129	850°	600	
4-23-14	4-5	46'	12:50 am 12:55 pm	Victor C	127	850°	600	
4-23-14	5-6	46'	12:55 am 12:59 pm	Ramon P	129	850°	600	
4-23-14	6-7	46'	12:56 am 1:00 pm	Victor C	127	850°	600	
4-23-14	7-8	46'	1:03 am 1:07 pm	Ramon P	129	850°	600	
4-23-14	8-9	46'	1:05 am 1:09 pm	Victor C	127	850°	600	
4-23-14	9-10	24'	1:10 am 1:13 pm	Ramon P	129	850°	600	
4-23-14	11-12	20'	1:11 am 1:14 pm	Victor C	127	850°	600	
4-23-14	12-13	40'	1:15 am 1:19 pm	Ramo P	129	850°	600	
4-23-14	1-13	40'	1:16 am 1:20 pm	Victor C	127	850°	600	
4-23-14	13-14	170'	1:25 am 1:45 pm	Ramon P	129	850°	600	
4-23-14	14-15	170'	1:25 am 1:45 pm	Victor C	127	850°	600	
4-23-14	15-16	170'	1:50 am 2:10 pm	Ramon P	129	850°	600	
4-23-14	16-17	170'	1:50 am 2:10 pm	Victor C	127	850°	600	
4-23-14	17-18	170'	2:15 am 2:35 pm	Ramon P	129	850°	600	
4-23-14	18-19	170'	2:15 am 2:35 pm	Victor C	127	850°	600	
4-23-14	19-20	170'	2:40 am 3:00 pm	Ramon P	129	850°	600	
4-23-14	20-21	170'	2:40 am 3:00 pm	Victor C	127	850°	600	
4-23-14	21-22	170'	3:05 am 3:25 pm	Ramon P	129	850°	600	
4-23-14	22-23	170'	3:05 am 3:25 pm	Victor C	127	850°	600	
4-23-14	23-24	170'	3:30 am 3:50 pm	Ramon P	129	850°	600	
	Total =							

Test Date	Test Type	Time IN		Time Out		Test Results	D. S. Number (NOTES)
4-23-14	AT	4:00	40	4:05	40	(P) F	
4-23-14	AT	4:01	40	4:06	39	(P) F	
4-23-14	AT	4:02	40	4:07	39	(P) F	
4-23-14	AT	4:03	40	4:08	40	(P) F	
4-23-14	AT	4:05	40	4:10	40	(P) F	
4-23-14	AT	4:08	40	4:13	39	(P) F	
4-23-14	AT	4:09	40	4:14	40	(P) F	
4-23-14	AT	4:10	40	4:15	40	(P) F	
4-23-14	AT	4:11	40	4:16	39	(P) F	
4-23-14	AT	4:16	40	4:21	40	(P) F	
4-23-14	AT	4:17	40	4:22	40	(P) F	
4-23-14	AT	4:18	40	4:23	38	(P) F	DS-1
4-23-14	AT	4:19	40	4:24	39	(P) F	
4-23-14	AT	4:20	40	4:25	39	(P) F	
4-23-14	AT	4:25	40	4:30	38	(P) F	
4-23-14	AT	4:26	40	4:31	39	(P) F	
4-23-14	AT	4:33	40	4:38	39	(P) F	DS-2
4-23-14	AT	4:38	40	4:43	40	(P) F	
4-23-14	AT	4:39	40	4:44	40	(P) F	
4-23-14	AT	4:40	40	4:45	40	(P) F	
4-23-14	AT	4:41	40	4:46	40	(P) F	DS-3
4-23-14	AT	4:49	40	4:54	40	(P) F	

Air Test: 40 psi for 5 minutes- 5 psi loss allowed.

Tested By: VICTOR C

Lange Containment Systems Inc.

Project Name: NE RYAN GULCH WATER
Project Manager:
Superintendent: VICTOR CASILLAS
Reported By: VICTOR CASILLAS

Primary (Secondary) Other:

Job#:

Material: 40mil HDPE Microspike Smooth

Weld Date	Seam No.	Seam Length	Time	Operator Name / ID#	Mach No.	Mach Temp	Mach Speed	Amb Temp	Test Date	Test Type	Time IN		Time Out		Test Results	D. S. Number (NOTES)
4-24-14	2-3	24	7:20 7:23 (am) pm	Ramon P	129	850°	500	Tiein	4-24-14	AT	8:00	40	8:05	39	(P) F	
4-24-14	1-4	32	7:23 7:27 (am) pm	Ramon P	129	850°	500	Tiein	4-24-14	AT	8:01	40	8:06	39	(P) F	
4-24-14	5-13	22.5'	7:27 7:30 (am) pm	Ramon P	129	850°	500	Tiein	4-24-14	AT	8:02	40	8:07	40	(P) F	
4-24-14	6-13	22.5'	7:30 7:33 (am) pm	Ramon P	129	850°	500	Tiein	4-24-14	AT	8:03	40	8:08	38	(P) F	DS-4
4-24-14	7-13	22.5'	7:33 7:36 (am) pm	Ramon P	129	850°	500	Tiein	4-24-14	AT	8:04	40	8:09	39	(P) F	
4-24-14	8-13	22.5'	7:36 7:39 (am) pm	Ramon P	129	850°	500	Tiein	4-24-14	AT	8:10	40	8:15	39	(P) F	
4-24-14	9-12	32'	7:39 7:44 (am) pm	Ramon P	129	850°	500	Tiein	4-24-14	AT	8:11	40	8:16	38	(P) F	
4-24-14	10-11	24'	7:44 7:47 (am) pm	Ramon P	129	850°	500	Tiein	4-24-14	AT	8:12	40	8:17	38	(P) F	
			am pm												P F	
			am pm												P F	
			am pm												P F	
			am pm												P F	
			am pm												P F	
			am pm												P F	
			am pm												P F	
			am pm												P F	
			am pm												P F	
			am pm												P F	
			am pm												P F	
			am pm												P F	
			am pm												P F	
			am pm												P F	
	Total =															

Air Test: 40 psi for 5 minutes- 5 psi loss allowed.

Tested By: VICTOR

Containment Systems Inc.

Project Name: NE RYAN GULCH WATER

Project Manager:

Superintendent: VICTOR CASILLAS

Reported By: VICTOR CASILLAS

Primary (Secondary) Other:

Job#:

Material: 40 mil APPE Microspike Smo

Weld Date	Seam No.	Seam Length	Time	Operator Name / ID#	Mach No.	Mach Temp	Mach Speed	Amb Temp
4-24-14	24-25	40'	12:50 am 12:57 pm	VICTOR C	127	850°	600	
4-24-14	25-26	18'	12:56 am 1:00 pm	Ramon P	129	850°	600	
4-24-14	27-28	24'	1:00 am 1:07 pm	Victor C	127	850°	600	
4-24-14	28-29	46	1:03 am 1:10 pm	Ramon P	129	850°	600	
4-24-14	29-30	46	1:08 am 1:14 pm	Victor C	127	850°	600	
4-24-14	30-31	46	1:13 am 1:18 pm	Ramon P	129	850°	600	
4-24-14	31-32	46'	1:19 am 1:25 pm	Victor C	127	850°	600	
4-24-14	32-33	46'	1:20 am 1:26 pm	Ramon P	129	850°	600	
4-24-14	33-34	24'	1:28 am 1:35 pm	Victor C	127	850°	600	
4-24-14	35-36	18'	1:30 am 1:33 pm	Ramon P	129	850°	600	
4-24-14	24-36	40'	1:40 am 1:45 pm	Victor C	127	850°	600	
			am pm					
			am pm					
			am pm					
			am pm					
			am pm					
			am pm					
			am pm					
			am pm					
			am pm					
			am pm					
			am pm					
Total =								

Test Date	Test Type	Time IN		Time Out		Test Results	D. S. Number (NOTES)
4-24-14	AT	2:00	40	2:05	38	(P) F	
4-24-14	AT	2:01	40	2:06	39	(P) F	
4-24-14	AT	2:02	40	2:07	38	(P) F	
4-24-14	AT	2:03	40	2:08	39	(P) F	
4-24-14	AT	2:04	40	2:09	38	(P) F	
4-24-14	AT	2:10	40	2:15	39	(P) F	
4-24-14	AT	2:11	40	2:16	38	(P) F	
4-24-14	AT	2:18	40	2:23	38	(P) F	DS-5
4-24-14	AT	2:19	40	2:24	40	(P) F	
4-24-14	AT	2:20	40	2:25	39	(P) F	
4-24-14	AT	2:21	40	2:26	38	(P) F	
						P F	
						P F	
						P F	
						P F	
						P F	
						P F	
						P F	
						P F	
						P F	
						P F	
						P F	
						P F	

Air Test: 40 psi for 5 minutes- 5 psi loss allowed. Tested By: VICTOR C

Containment Systems Inc.

Project Name: NE RYAN GULCH WATER

Project Manager:

Superintendent: VICTOR CASILLAS

Reported By: VICTOR CASILLAS

Primary (Secondary) Other:

Job#:

Material: 40 mil HDPE Microspike Smooth

Weld Date	Seam No.	Seam Length	Time	Operator Name / ID#	Mach No.	Mach Temp	Mach Speed	Amb Temp
4-25-14	26-27	26	7:20 am 7:23 pm	Victor C	127	850°	500	Tein
4-25-14	25-28	32'	7:25 am 7:29 pm	Victor C	127	850°	500	Tein
4-25-14	24-29	22.5'	7:29 am 7:32 pm	Victor C	127	850°	500	Tein
4-25-14	24-30	22.5'	7:32 am 7:35 pm	Victor C	127	850°	500	Tein
4-25-14	24-31	22.5'	7:35 am 7:38 pm	Victor C	127	850°	500	Tein
4-25-14	24-32	22.5'	7:38 am 7:41 pm	Victor C	127	850°	500	Tein
4-25-14	33-36	32'	7:41 am 7:45 pm	Victor C	127	850°	500	Tein
4-25-14	34-35	24'	7:45 am 7:49 pm	Victor C	127	850°	500	Tein
			am pm					
			am pm					
			am pm					
			am pm					
			am pm					
			am pm					
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			am pm					
			am pm					
			am pm					
			am pm					
			am pm					
	Total =							

Test Date	Test Type	Time IN		Time Out		Test Results	D. S. Number (NOTES)
4-25-14	AT	8:00	40	8:05	39	(P) F	
4-25-14	AT	8:01	40	8:06	38	(P) F	
4-25-14	AT	8:02	40	8:07	40	(P) F	DS-6
4-25-14	AT	8:03	40	8:08	39	(P) F	
4-25-14	AT	8:04	40	8:09	38	(P) F	
4-25-14	AT	8:10	40	8:15	38	(P) F	
4-25-14	AT	8:11	40	8:16	39	(P) F	
4-25-14	AT	8:13	40	8:18	40	(P) F	
						P F	
						P F	
						P F	
						P F	
						P F	
						P F	
						P F	
						P F	
						P F	
						P F	
						P F	
						P F	
						P F	
						P F	
						P F	

Air Test: 40 psi for 5 minutes- 5 psi loss allowed.

Tested By: VICTOR C

60 MIL

Containment Systems Inc.

Project Name: NE RYAN GULCH WATER
Project Manager:
Superintendent: VICTOR CASILLAS (Primary) Secondary Other: Job#:
Reported By: VICTOR CASILLAS Material: 60 mil HDPE Microspike

Weld Date	Seam No.	Seam Length	Time	Operator Name / ID#	Mach No.	Mach Temp	Mach Speed	Amb Temp
4-28-14	1-2	18'	7:20 am 7:24 pm	Victor Casillas	127	850°	400	
4-28-14	3-4	24'	7:25 am 7:30 pm	Ramon Placencia	129	850°	400	
4-28-14	4-5	46'	7:25 am 7:33 pm	Victor C	127	850°	400	
4-28-14	5-6	46'	7:32 am 7:40 pm	Ramon P	129	850°	400	
4-28-14	6-7	46'	7:35 am 7:43 pm	Victor C	127	850°	400	
4-28-14	7-8	46'	7:42 am 7:50 pm	Ramon P	129	850°	400	
4-28-14	8-9	46'	7:45 am 7:53 pm	Victor C	127	850°	400	
4-28-14	9-10	24'	7:52 am 7:56 pm	Ramon P	129	850°	400	
4-28-14	11-12	18'	7:55 am 7:59 pm	Victor C	127	850°	400	
4-28-14	12-13	40'	8:00 am 8:07 pm	Ramon P	129	850°	400	
4-28-14	1-13	40'	8:00 am 8:07 pm	Victor C	127	850°	400	
4-28-14	13-14	170'	8:10 am 8:40 pm	Ramon P	129	850°	400	
4-28-14	15-16	22.5'	8:10 am 8:14 pm	Victor Casillas	127	850°	400	CR
4-28-14	14-15	46'	8:15 am 8:20 pm	Victor C	127	850°	400	
4-28-14	14-16	124	8:20 am 8:45 pm	Victor C	127	850°	400	
4-28-14	15-17	46'	8:45 am 8:50 pm	Ramon P	129	850°	400	
4-28-14	16-17	124'	8:50 am 8:15 pm	Ramon P	129	850°	400	
4-28-14	17-18	170'	8:50 am 8:20 pm	Victor C	127	850°	400	
4-28-14	19-20	22.5'	8:20 am 8:24 pm	Ramon P	129	850°	400	CR
4-28-14	18-19	86'	8:25 am 8:40 pm	Ramon P	129	850°	400	
4-28-14	18-20	84'	8:40 am 8:55 pm	Ramon P	129	850°	400	
			am pm					
	Total =							

Test Date	Test Type	Time IN		Time Out		Test Results	D. S. Number (NOTES)
4-28-14	AT	1:00	40	1:05	40	P F	
4-28-14	AT	1:01	40	1:06	40	P F	
4-28-14	AT	1:02	40	1:07	40	P F	
4-28-14	AT	1:04	40	1:09	40	P F	
4-28-14	AT	1:08	40	1:13	40	P F	
4-28-14	AT	1:09	40	1:14	39	P F	DS-1
4-28-14	AT	1:10	40	1:15	40	P F	
4-28-14	AT	1:11	40	1:16	40	P F	
4-28-14	AT	1:18	40	1:23	40	P F	
4-28-14	AT	1:19	40	1:24	39	P F	
4-28-14	AT	1:20	40	1:25	40	P F	
4-28-14	AT	1:21	40	1:26	38	P F	
4-28-14	AT	1:24	40	1:29	40	P F	
4-28-14	AT	1:25	40	1:30	40	P F	
4-28-14	AT	1:26	40	1:31	39	P F	DS-2
4-28-14	AT	1:27	40	1:32	40	P F	
4-28-14	AT	1:35	40	1:40	40	P F	
4-28-14	AT	1:36	40	1:41	40	P F	
4-28-14	AT	1:43	40	1:48	40	P F	
4-28-14	AT	1:44	40	1:49	40	P F	
4-28-14	AT	1:45	40	1:50	39	P F	DS-3
						P F	

Air Test: 40 psi for 5 minutes- 5 psi loss allowed. Tested By: VICTOR C

Lange Containment Systems Inc.

Project Name: NE RYAN GULCH WATER

Project Manager:

Superintendent: VICTOR CASILLAS (Primary) Secondary Other:

Reported By: VICTOR CASILLAS

Job#:

Material: 60 mil HDPE Microspike

Weld Date	Seam No.	Seam Length	Time	Operator Name / ID#	Mach No.	Mach Temp	Mach Speed	Amb Temp
4-28-14	19-21	86'	8:25 am 8:40 pm	Victor C	127	850°	400	
4-28-14	20-21	84'	8:40 am 8:55 pm	Victor C	127	850°	400	
4-28-14	21-22	170'	9:40 am 10:10 pm	Ramon P	129	850°	400	
4-28-14	23-24	225'	8:56 am 9:00 pm	Victor C	127	850°	400	CR
4-28-14	22-23	110'	9:45 am 10:05 pm	Victor C	127	850°	400	
4-28-14	22-24	60'	10:05 am 10:15 pm	Victor C	127	850°	400	
4-28-14	23-25	110	10:15 am 10:35 pm	Ramon P	129	850°	400	
4-28-14	24-25	60'	10:35 am 10:45 pm	Ramon P	129	850°	400	
4-28-14	25-26	170'	10:20 am 10:40 pm	Victor C	127	850°	400	
4-28-14	26-27	170'	10:30 am 11:30 pm	Ramon P	129	850°	400	
4-28-14	27-28	40'	10:50 am 10:58 pm	Victor C	127	850°	400	
4-28-14	28-29	18'	11:35 am 11:39 pm	Ramon P	129	850°	400	
4-28-14	30-31	24'	11:00 am 11:05 pm	Victor C	127	850°	400	
4-28-14	31-32	46'	11:42 am 11:50 pm	Ramon P	129	850°	400	
4-28-14	32-33	46'	11:10 am 11:18 pm	Victor C	127	850°	400	
4-28-14	33-34	46'	11:52 am 12:00 pm	Ramon P	129	850°	400	
4-28-14	34-35	46'	11:25 am 11:34 pm	Victor C	127	850°	400	
4-28-14	35-36	46'	12:02 am 12:10 pm	Ramon P	129	850°	400	
4-28-14	36-37	24'	11:40 am 11:45 pm	Victor C	127	850°	400	
4-28-14	38-39	20'	12:13 am 12:18 pm	Ramon P	129	850°	400	
4-28-14	27-39	40'	11:50 am 11:59 pm	Victor C	127	850°	400	
			am pm					
	Total =							

Test Date	Test Type	Time IN		Time Out		Test Results	D. S. Number (NOTES)
4-28-14	AT	2:03	40	2:08	40	P F	
4-28-14	AT	2:04	40	2:09	40	P F	
4-28-14	AT	2:05	40	2:10	40	P F	
4-28-14	AT	2:06	40	2:11	39	P F	
4-28-14	AT	2:13	40	2:18	40	P F	
4-28-14	AT	2:18	40	2:23	40	P F	
4-28-14	AT	2:19	40	2:24	40	P F	DS- 4
4-28-14	AT	2:20	40	2:25	39	P F	
4-28-14	AT	2:28	40	2:33	40	P F	
4-28-14	AT	2:29	40	2:34	40	P F	
4-28-14	AT	2:30	40	2:35	40	P F	
4-28-14	AT	2:31	40	2:36	38	P F	
4-28-14	AT	2:40	40	2:45	40	P F	
4-28-14	AT	2:41	40	2:46	40	P F	
4-28-14	AT	2:42	40	2:47	39	P F	
4-28-14	AT	2:49	40	2:54	40	P F	
4-28-14	AT	2:50	40	2:55	40	P F	
4-28-14	AT	2:51	40	2:56	39	P F	
4-28-14	AT	3:00	40	3:05	40	P F	
4-28-14	AT	3:01	40	3:06	39	P F	
4-28-14	AT	3:02	40	3:07	40	P F	
						P F	

Air Test: 40 psi for 5 minutes- 5 psi loss allowed.

Tested By: Victor Casillas

Containment Systems Inc.

Project Name: NE RYAN GULCH WATER

Project Manager:

Superintendent: VICTOR CASILLAS (Primary) Secondary Other: Job#:

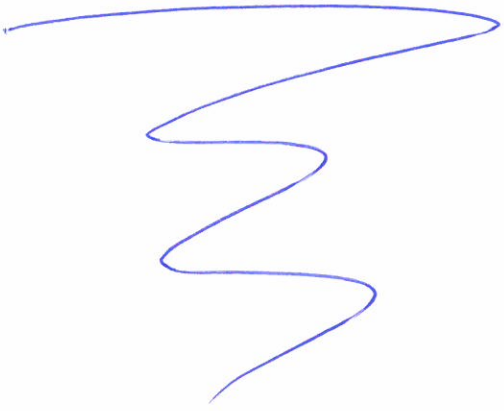
Reported By: VICTOR CASILLAS Material: 60 mil HDPE Microspike Smooth

Weld Date	Seam No.	Seam Length	Time	Operator Name / ID#	Mach No.	Mach Temp	Mach Speed	Amb Temp
4-29-14	10-11	24'	7:15 am 7:19 pm	Victor C	127	850°	400	Tie in
4-29-14	9-12	32'	7:19 am 7:25 pm	Victor C	127	850°	400	Tie in
4-29-14	8-13	22.5'	7:25 am 7:29 pm	Victor C	127	850°	400	Tie in
4-29-14	7-13	22.5'	7:29 am 7:33 pm	Victor C	127	850°	400	Tie in
4-29-14	6-13	22.5'	7:33 am 7:37 pm	Victor C	127	850°	400	Tie in
4-29-14	5-13	22.5'	7:37 am 7:41 pm	Victor C	127	850°	400	Tie in
4-29-14	1-4	22.5'	7:41 am 7:45 pm	Victor C	127	850°	400	Tie in
4-29-14	2-3	22.5'	7:45 am 7:49 pm	Victor C	127	850°	400	Tie in
4-29-14	29-30	24	8:00 am 8:04 pm	Victor C	127	850°	400	Tie in
4-29-14	28-31	30'	8:04 am 8:10 pm	Victor C	127	850°	400	Tie in
4-29-14	27-32	22.5'	8:10 am 8:04 pm	Victor C	127	850°	400	Tie in
4-29-14	27-33	22.5'	8:04 am 8:08 pm	Victor C	127	850°	400	Tie in
4-29-14	27-34	22.5'	8:08 am 8:12 pm	Victor C	127	850°	400	Tie in
4-29-14	27-35	22.5'	8:12 am 8:16 pm	Victor C	127	850°	400	Tie in
4-29-14	36-39	32'	8:16 am 8:22 pm	Victor C	127	850°	400	Tie in
4-29-14	37-38	24'	8:22 am 8:27 pm	Victor C	127	850°	400	Tie in
4-29-14	40-41	22.5'	8:30 am 8:34 pm	Victor C	127	850°	400	CR
4-29-14	40-42	32'	8:35 am 8:40 pm	Victor C	127	850°	400	
4-29-14	41-42	30'	8:40 am 8:45 pm	Victor C	127	850°	400	
			am pm					
			am pm					
	Total =		am pm					

Test Date	Test Type	Time IN		Time Out		Test Results	D. S. Number (NOTES)
4-29-14	AT	9:30	40	9:35	40	P F	
4-29-14	AT	9:31	40	9:36	40	P F	
4-29-14	AT	9:32	40	9:37	40	P F	
4-29-14	AT	9:33	40	9:38	40	P F	
4-29-14	AT	9:38	40	9:43	40	P F	
4-29-14	AT	9:39	40	9:44	40	P F	DS-5
4-29-14	AT	9:40	40	9:45	40	P F	
4-29-14	AT	9:41	40	9:46	39	P F	
4-29-14	AT	9:45	40	9:50	40	P F	
4-29-14	AT	9:46	40	9:51	40	P F	
4-29-14	AT	9:47	40	9:52	39	P F	
4-29-14	AT	9:48	40	9:53	40	P F	
4-29-14	AT	9:56	40	10:01	39	P F	DS-6
4-29-14	AT	9:57	40	10:02	40	P F	
4-29-14	AT	9:58	40	10:03	40	P F	
4-29-14	AT	9:59	40	10:04	40	P F	
4-29-14	AT	10:08	40	10:13	40	P F	
4-29-14	AT	10:09	40	10:14	40	P F	
4-29-14	AT	10:10	40	10:15	40	P F	
						P F	
						P F	
						P F	

Air Test: 40 psi for 5 minutes- 5 psi loss allowed. Tested By: VICTOR C

DESTRUCT SUMMARY



40 MIL

Lange Containment Systems Inc.

Project Name: NE RYAN GULCH WATER
Project Manager: _____
Superintendent: VICTOR CASILLAS
Reported By: VICTOR CASILLAS

Primary (Secondary) Other: _____

Job#: _____

Material: 40 mil HDPE Microspike Smooth

■ Destructive Test

Peel Test(Extr.) min ppi Peel Test(Fusion) ppi Shear Test min ppi

D.S. No.	Seam No.	Weld Time	Weld Date	Operator Name/ ID	Machine Number	Coupon 1 A/B	Coupon 2 A/B	Coupon 3 A/B	Coupon 4 A/B	Coupon 5 A/B	Coupon 1 Shear	Coupon 2 Shear	Coupon 3 Shear	Coupon 4 Shear	Coupon 5 Shear	Ambient Temp	Results	Machine Temp & Speed	NOTES
DS-1	13-14	PM	4-23-14	Ramon P	129	100/94	89/94	91/98	99/92	94/99	139	144	140	146	141		(P) F	850 / 600	
DS-2	18-19	PM	4-23-14	Victor C	127	93/99	91/94	91/90	94/99	99/100	140	150	147	141	144		(P) F	850 / 600	
DS-3	22-23	PM	4-23-14	Victor C	127	98/101	96/97	94/96	91/89	97/91	144	139	142	151	146		(P) F	850 / 600	
DS-4	6-13	AM	4-24-14	Ramon P	129	103/100	101/96	94/97	90/94	93/90	146	144	141	142	147		(P) F	850 / 500	
DS-5	32-33	PM	4-24-14	Ramon P	129	99/101	104/100	107/100	91/97	93/97	140	144	143	147	141		(P) F	850 / 600	
DS-6	24-29	AM	4-25-14	Victor C	127	93/98	96/91	89/96	94/101	102/100	141	146	144	142	140		(P) F	850 / 500	
						/	/	/	/	/							P F		
						/	/	/	/	/							P F		
						/	/	/	/	/							P F		
						/	/	/	/	/							P F		
						/	/	/	/	/							P F		
						/	/	/	/	/							P F		
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						/	/	/	/	/							P F		
						/	/	/	/	/							P F		
						/	/	/	/	/							P F		
						/	/	/	/	/							P F		
						/	/	/	/	/							P F		
						/	/	/	/	/							P F		

Samples Sent Via: _____ Last Sample #: _____ On (Date): _____

Notes: _____

60 MIL

Containment Systems Inc.

Project Name: NE RYAN GULCH WATER
Project Manager: _____
Superintendent: VICTOR CASILLAS
Reported By: VICTAR CASILLAS

(Primary) Secondary Other: _____

Job#: _____

Material: 60 mil HDPE Microspike Smooth

Destructive Test

D.S. No.	Seam No.	Weld Time	Weld Date	Operator Name/ ID	Machine Number	Peel Test(Extr.) min ppi Coupon 1 A / B	Coupon 2 A / B	Coupon 3 A / B	Coupon 4 A / B	Peel Test(Fusion) ppi Coupon 5 A / B	Shear Test min ppi Coupon 1 Shear	Coupon 2 Shear	Coupon 3 Shear	Coupon 4 Shear	Coupon 5 Shear	Ambient Temp	Results	Machine Temp & Speed	NOTES
DS-1	7-8	Am	4-28-14	Ramon P	129	131/140	133/136	144/140	136/139	133/129	179	184	180	186	183		(P) F	850°/400	
DS-2	14-16	Am	4-28-14	Victor C	127	136/126	140/131	136/131	129/132	136/139	190	194	188	193	191		(P) F	850°/400	
DS-3	18-20	Am	4-28-14	Ramon P	129	126/130	125/133	124/130	128/124	131/130	196	192	195	197	194		(P) F	850°/400	
DS-4	23-25	Am	4-28-14	Ramon P	129	136/130	126/130	128/136	137/130	128/140	191	188	186	191	189		(P) F	850°/400	
DS-5	5-13	Am	4-29-14	Victor C	127	141/134	134/140	136/136	141/146	130/131	184	180	186	185	187		(P) F	850°/400	
DS-6	27-34	Am	4-29-14	Victor C	127	129/139	126/154	141/144	128/141	129/141	188	181	183	186	179		(P) F	850°/400	
						/	/	/	/	/							P F		
						/	/	/	/	/							P F		
						/	/	/	/	/							P F		
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						/	/	/	/	/							P F		
						/	/	/	/	/							P F		

Samples Sent Via: _____ Last Sample #: _____ On (Date): _____

Notes: _____

REPAIR LOG

40 MIL

Lange Containment Systems Inc.

Project Name: NE RYAN GULCH WATER | 40 | HDPE | **Date:** 4-25-2014

Project Manager: | | HDT | **Job#:**

Supintendent: VICTOR CASILLAS | | PPR | **Thickness:**

| | Other:

Primary (Secondary) Other

VT=Vacum Test ST=Spark Test PT=Probe Test

Repair Number	Damage Code	Seam # or Panel #	Location	Date	Equip #	Operator	Repair Type	Approx. Size	Test Data: Test	Results	Date
1	DS-1	13-14	AT 50' WEOS	4-25-14	82	AS	P	5'X2	(VT) ST PT	(P) F	4-25-14
2	DS-2	18-19	AT 66' EEOS	4-25-14	82	AS	P	5'X2'	(VT) ST PT	(P) F	4-25-14
3	DS-3	22-23	AT 85' WEOS	4-25-14	82	AS	P	5'X2'	(VT) ST PT	(P) F	4-25-14
4	DS-4	6-13	AT 11' WEOS	4-25-14	82	AS	P	5'X2'	(VT) ST PT	(P) F	4-25-14
5	DS-5	32-33	AT 30' NEOS	4-25-14	82	AS	P	5'X2'	(VT) ST PT	(P) F	4-25-14
6	DS-6	24-29	AT 11' EEOS	4-25-14	82	AS	P	5'X2'	(VT) ST PT	(P) F	4-25-14
7	T	1-2-3-4	X	4-25-14	82	AS	P	2'X2'	(VT) ST PT	(P) F	4-25-14
8	T	1-4-5-13	X	4-25-14	82	AS	P	3'X3'	(VT) ST PT	(P) F	4-25-14
9	T	5-6-13	X	4-25-14	82	AS	P	2'X2'	(VT) ST PT	(P) F	4-25-14
10	T	6-7-13	X	4-25-14	82	AS	P	3'X2'	(VT) ST PT	(P) F	4-25-14
11	T	7-8-13	X	4-25-14	82	AS	P	2'X2'	(VT) ST PT	(P) F	4-25-14
12	T	8-9-12-13	X	4-25-14	82	AS	P	3'X3'	(VT) ST PT	(P) F	4-25-14
13	T	9-10-11-12	X	4-25-14	82	AS	P	2'X2'	(VT) ST PT	(P) F	4-25-14
14	T	25-26-27-28	X	4-25-14	82	AS	P	3'X2'	(VT) ST PT	(P) F	4-25-14
15	T	24-25-28-29	X	4-25-14	82	AS	P	3'X3'	(VT) ST PT	(P) F	4-25-14
16	T	24-29-30	X	4-25-14	82	AS	P	3'X2'	(VT) ST PT	(P) F	4-25-14
17	T	24-30-31	X	4-25-14	82	AS	P	2'X2'	(VT) ST PT	(P) F	4-25-14
18	T	24-31-32	X	4-25-14	82	AS	P	2'X2'	(VT) ST PT	(P) F	4-25-14
19	T	24-32-33-36	X	4-25-14	82	AS	P	3'X3'	(VT) ST PT	(P) F	4-25-14
20	T	33-34-35-36	X	4-25-14	82	AS	P	3 X 3'	(VT) ST PT	(P) F	4-25-14
									VT ST PT	P F	
									VT ST PT	P F	
									VT ST PT	P F	
									VT ST PT	P F	
									VT ST PT	P F	
									VT ST PT	P F	
									VT ST PT	P F	
									VT ST PT	P F	
									VT ST PT	P F	

Vacum Test: PSI for Seconds. Probe Test: PSI.

Damage Codes:

Bo - Burn Out
CR - Crease
DS-# Destruct Sample
EE - Earthwork Equipment Damage
FM - Fish Mouth
ES- Exposed Scrim
SI - Subgrade Irregularity
RW- Roller Wrinkle in Seam
WR - Wrinkle
WS - Welder Restart
BL - Blister
T - Joint

Repair Types:

C - Cap Strip
P - Patch
B - Extrusion Bead

* TOS - Top of Slope
** BOS - Toe of Slope

60 MIL

Containment Systems Inc.

Project Name: NE RYAN GULCH WATER
Project Manager:
Supintendent: VICTOR CASILCAS

GO	HDPE
	HDT
	PPR
	Other:

Date: 04-29-2014
Job#:
Thickness:

(Primary) Secondary Other

VT=Vacum Test ST=Spark Test PT=Probe Test

Repair Number	Damage Code	Seam # or Panel #	Location	Date	Equip #	Operator	Repair Type	Approx. Size	Test Data		
									Test	Results	Date
1	DS-1	7-8	AT 30' NEOS	4-29-14	82	AS	P	5'X2'	(VT) ST PT	(P) F	4-29-14
2	DS-2	14-16	AT 15' WEOS	4-29-14	82	AS	P	5'X2'	(VT) ST PT	(P) F	4-29-14
3	DS-3	18-20	AT 50' EEOS	4-29-14	82	AS	P	5'X2'	(VT) ST PT	(P) F	4-29-14
4	DS-4	23-25	AT 50' W.EOS	4-29-14	82	AS	P	5'X2'	(VT) ST PT	(P) F	4-29-14
5	DS-5	5-13	AT 11 WEOS	4-29-14	82	AS	P	5'X2'	(VT) ST PT	(P) F	4-29-14
6	DS-6	27-34	AT 11 WEOS	4-29-14	82	AS	P	5'X2'	(VT) ST PT	(P) F	4-29-14
7	Pipe boot	33	AT 2' SEOP	4-29-14	82	AS	Pipe boot	6'X6'	(VT) ST PT	(P) F	4-29-14
8	T	1-2-3-14	X	4-29-14	82	AS	P	2'X2'	(VT) ST PT	(P) F	4-29-14
9	T	1-4-5-13	X	4-29-14	82	AS	P	3'X3'	(VT) ST PT	(P) F	4-29-14
10	T	5-6-13	X	4-29-14	82	AS	P	2'X2'	(VT) ST PT	(P) F	4-29-14
11	T	6-7-13	X	4-29-14	82	AS	P	2'X2'	(VT) ST PT	(P) F	4-29-14
12	T	7-8-13	X	4-29-14	82	AS	P	2'X2'	(VT) ST PT	(P) F	4-29-14
13	T	8-9-12-13	X	4-29-14	82	AS	P	3'X3'	(VT) ST PT	(P) F	4-29-14
14	T	9-10-11-12	X	4-29-14	82	AS	P	3'X2'	(VT) ST PT	(P) F	4-29-14
15	CR	14-15-16	X	4-29-14	82	AS	P	2'X2'	(VT) ST PT	(P) F	4-29-14
16	CR	15-16-17	X	4-29-14	82	AS	P	2'X2'	(VT) ST PT	(P) F	4-29-14
17	CR	18-19-20	X	4-29-14	82	AS	P	2'X2'	(VT) ST PT	(P) F	4-29-14
18	CR	19-20-21	X	4-29-14	82	AS	P	3'X3'	(VT) ST PT	(P) F	4-29-14
19	CR	22-23-24	X	4-29-14	82	AS	P	3'X2'	(VT) ST PT	(P) F	4-29-14
20	CR	23-24-25	X	4-29-14	82	AS	P	2'X2'	(VT) ST PT	(P) F	4-29-14
21	T	28-29-30-31	X	4-29-14	82	AS	P	2'X2'	(VT) ST PT	(P) F	4-29-14
22	T	27-28-31-32	X	4-29-14	82	AS	P	3'X2'	(VT) ST PT	(P) F	4-29-14
23	T	27-32-33	X	4-29-14	82	AS	P	3'X2'	(VT) ST PT	(P) F	4-29-14
24	T	27-33-34	X	4-29-14	82	AS	P	3'X3'	(VT) ST PT	(P) F	4-29-14
25	T	27-34-35	X	4-29-14	82	AS	P	2'X2'	(VT) ST PT	(P) F	4-29-14
26	T	27-35-36-39	X	4-29-14	82	AS	P	3'X3'	(VT) ST PT	(P) F	4-29-14
27	T	36-37-38-39	X	4-29-14	82	AS	P	2'X2'	(VT) ST PT	(P) F	4-29-14
28	CR	40-41-42	X	4-29-14	82	AS	P	2'X2'	(VT) ST PT	(P) F	4-29-14

Vacum Test: PSI for Seconds. Probe Test: PSI.

Damage Codes:

Bo - Burn Out
CR - Crease
DS-# Destruct Sample
EE - Earthwork Equipment Damage
FM - Fish Mouth
ES- Exposed Scrim
SI - Subgrade Irregularity
RW- Roller Wrinkle in Seam
WR - Wrinkle
WS - Welder Restart
BL - Blister
T - Joint

Repair Types:

C - Cap Strip
P - Patch
B - Extrusion Bead

* TOS - Top of Slope
** BOS - Toe of Slope

PANEL PLACEMENT SUMMARY

Lange Containment Systems Inc.

Phone: (800) 446-4898 Fax: (303) 446-8798 LinerGeeks@LangeContainment.com www.LangeContainment.com

Panel Placement Summary

Project Name: NE RYAN GULCH WATER RECYCLING

QC Inspector: VICTOR CASILLAS

GCL

Panel Number	Date	Time	Roll Number	Material ID	Length	Width	Final Area (SF)	Comments
1	4-23-14	AM	00470	GCL	41	14'	574	
2			00470		29'	14'	406	
3			00470		17	14'	238	
3 A			00470		11	11'	121	
4			00462		21	14'	294	
5			00462		39'	14'	546	
6			10357		53'	14'	742	2921
7			10357		55'		770	
8			10357		55'		770	
9			10424		55'		770	
10			10424		55'		770	
11			10424		55'		770	3850
12			10385		47'		658	
13			10385		31'		434	
13 A			10385		12'		168	
14			10385		11		154	
15			10385		29'		406	
16			10478		41		574	
17			10478		89'		1246	
18			10471		89'		1246	
19			10471		60'		840	
20			10475		81'		1134	
21			10475		81'		1134	
22	↓	↓	10479	↓	110'	↓	1540	9534

16305

Lange Containment Systems inc.

Phone: (800) 446-4898 Fax: (303) 446-8798 LinerGeeks@LangeContainment.com www.LangeContainment.com

Panel Placement Summary

Project Name: NERYAN GULCH WATER RECYCLING

QC Inspector: VICTOR CASILLAS

Panel Number	Date	Time	Roll Number	Material ID	Length	Width	Final Area (SF)	Comments
23	4-23-14	AM	00462	GCL	90'	14'	1260	
24		AM	00476		90'	14'	1260	
25			00476		45'		630	
26			00472		45'		630	
27			00472		90'		1260	
28			00474		90'		1260	
29			00474		45'		630	
30			00473		45'		630	
31			00473		90'		1260	
32			00477		90'		1260	
33			00477		45'		630	
34			00467		45'		630	
35			00467		90'		1260	
36			11173		90'		1260	
37			11173		45'		630	
38			00466		45'		630	
39			00466		90'		1260	
40			10286		90'		1260	
41			10286		45		630	
42			00024		45		630	18900
43			10292		43		602	
44			10292		29		406	
45			10289		11		164	
46			10292		12		168	
47			10292		31		434	
48	↓	↓	10289	↓	47	↓	658	2422

21322

Lange Containment Systems Inc.

Phone: (800) 446-4898 Fax: (303) 446-8798 LinerGeeks@LangeContainment.com www.LangeContainment.com

Panel Placement Summary

Project Name: NE RYAN GULCH WATER RECYCLING

QC Inspector: VICTOR CASILLAS

Panel Number	Date	Time	Roll Number	Material ID	Length	Width	Final Area (SF)	Comments
49	4-23-14	PM	10289	GCL	55'	14'	770	
50			10289		55'		770	
51			00022		55'		770	
52			00022		55'		770	
53			00024		55'		770	
54			0024		47'		658	4508
55			09502		80'		1120	
56			09502		80'		1120	
57			00018		80'		1120	
58			10288		20'		280	
59			00018		60'		840	
60			10288		80'		1120	
61			00023		30'		420	
62			10288		50'		700	
63			00023		80'		1120	
64			00025		35'		490	
65			00023		45'		630	
66			00025		80'		1120	
67			00025		30'		420	
68			00019		50'		700	
69			00019		80'		1120	
70			00020		80'		1120	
71			00020		80'		1120	
72			04676		80'		1120	
73			04676		80'		1120	16800
	↓	↓		↓		↓		

21308

Lange Containment Systems Inc.

Phone: (800) 446-4898 Fax: (303) 446-8798 LinerGeeks@LangeContainment.com www.LangeContainment.com

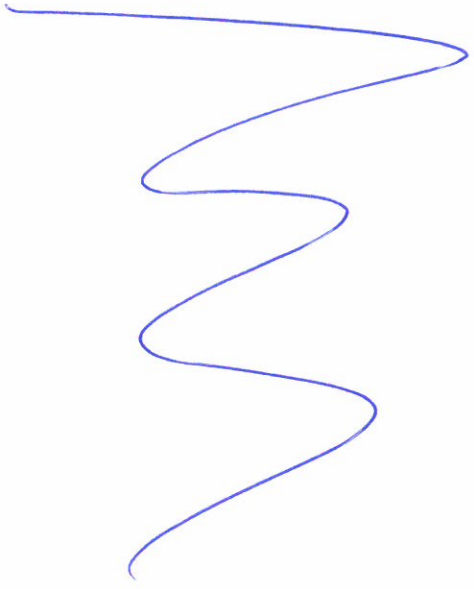
Panel Placement Summary

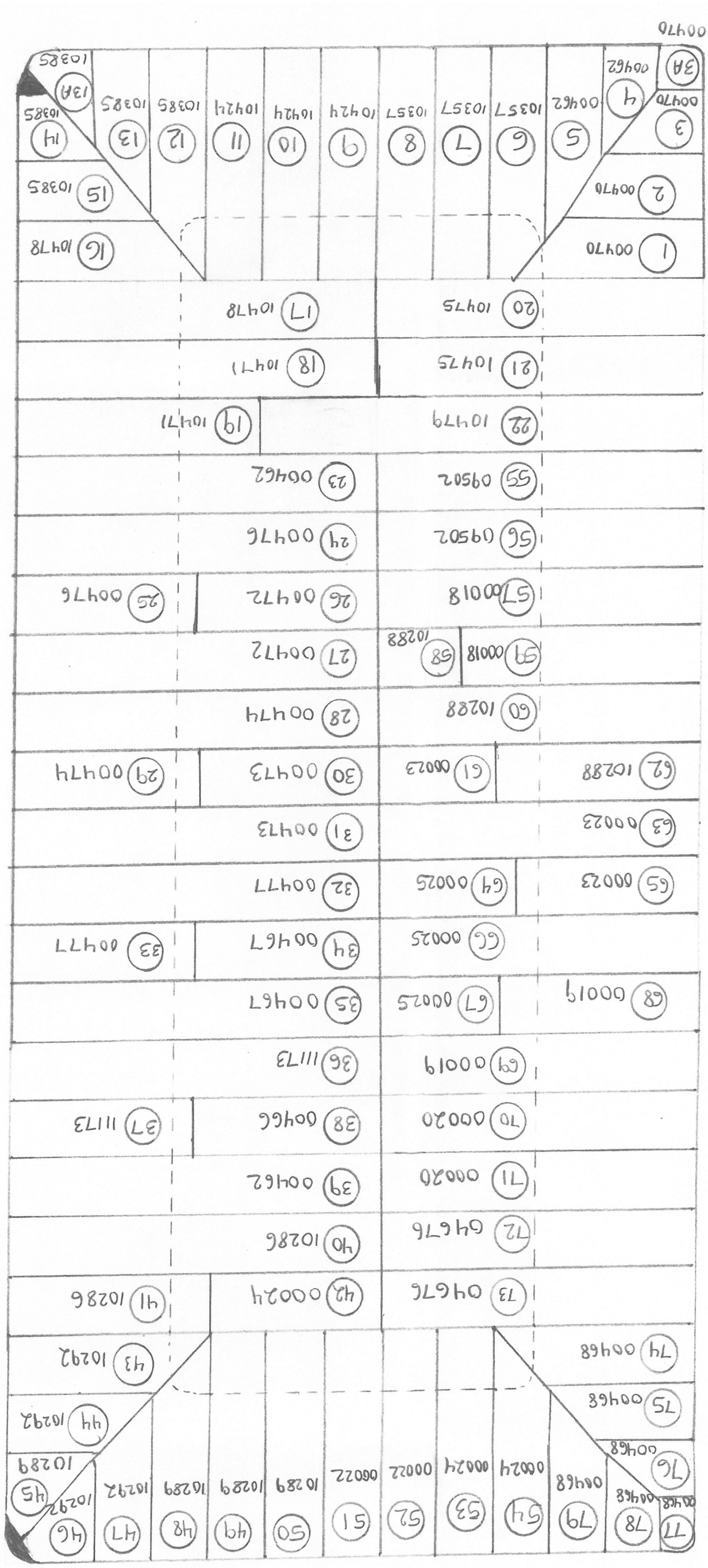
Project Name: NE RYAN GULCH WATER RECYCLING

QC Inspector: VICTOR CASILLAS

Panel Number	Date	Time	Roll Number	Material ID	Length	Width	Final Area (SF)	Comments
74	4-23-14	PM	00468	GCL	44'	14'	616	
75	4-23-14	PM	00468	GCL	31'	14'	434	
76	4-23-14	PM	00468	GCL	17'	14'	238	
77	4-23-14	PM	00468	GCL	10'	11'	110	
78	4-23-14	PM	00468	GCL	17'	14'	238	
79	4-23-14	PM	00468	GCL	31'	14'	434	

AS
BUILT

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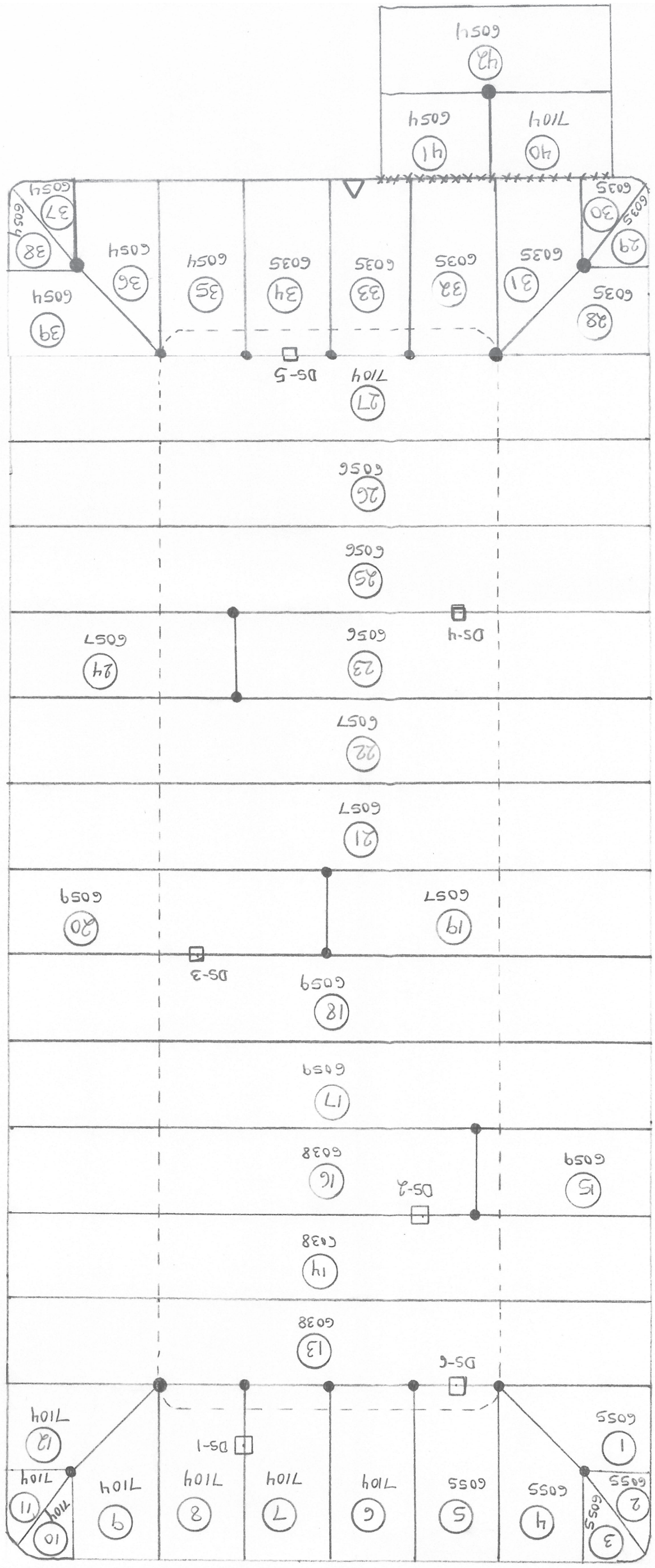
PRIMARY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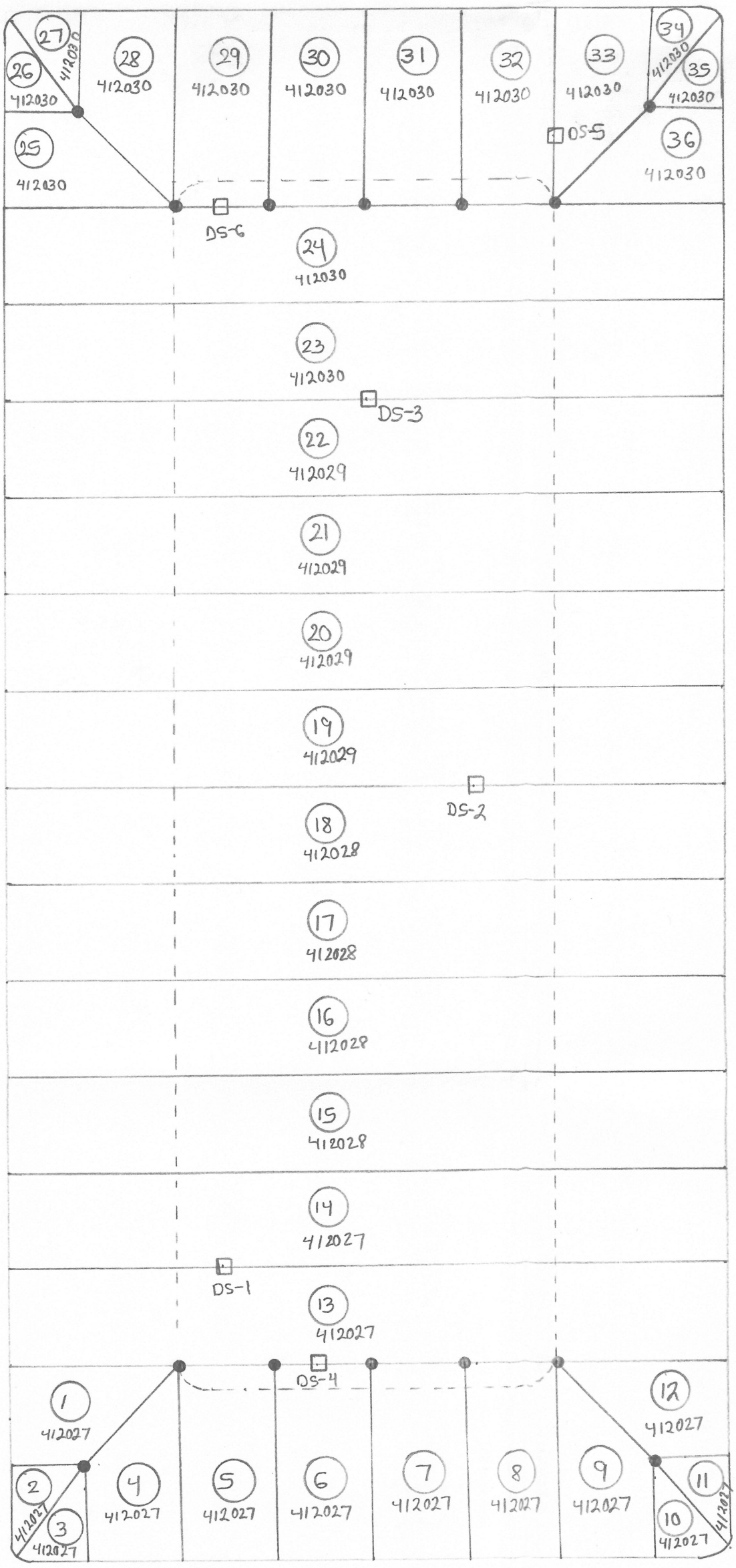
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Lange Containment Systems Inc.

POND INSPECTION: Ryans Gulch (WPX) Date: 6-16-14

General Overall Condition: Ready to hold Water, Looks great.

Holes: None

Blisters: None

Seam Issues: None

Patches Applied: None

Pipe Boots: All pipe boot seals satisfactory

Notes and Comments: Met Colten at the pit June, 16, 2014. Walked slopes and portion of floor that didn't have water. No holes/defects were found.

Lange Containment Systems, Inc. (LCSI) Inspected the Pit, Pond at Ryan's Gulch on June 16, 2014. We found the pit to be in satisfactory condition and certify to the extent of a visual inspection allows.

Inspected By:

Signature Stacy Cohoe 6-18-14 Date

Signature Jane Wood 6-18-14 Date